

ABSTRACT OF CAPSTONE

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February 22, 2016

THE HEAD OF THE HOLLER: GUIDED PLACE-BASED DIGITAL
EDUCATION IN RURAL APPALACHIA

Abstract of capstone

A capstone submitted in partial fulfillment of the
Requirements for the degree of Doctor of Education in the
College of Education
At Morehead State University

By

Bruce Parsons

Pikeville, Kentucky

Committee Chair: John H. Curry, Associate Professor

Morehead, Kentucky

February 22, 2016

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THE HEAD OF THE HOLLER: GUIDED PLACE-BASED DIGITAL
EDUCATION IN RURAL APPALACHIA

The Holler, an online social learning network designed for digital place-based multimedia implementation in Central Appalachia, has access to students, teachers, and administrators in 17 rural Eastern Kentucky school districts. The capstone project, a three-issue digital publication entitled *Head of the Holler*, was created to engage users and promote model interaction and creativity on The Holler social learning network.

The *Head of the Holler* capstone project was designed to engage new users for theHoller.org and to transition current users from interacting in the most basic of ways, posts about new technology purchased for the classroom and other surface-level sharing, to power users of the site, sharing their process for digital learning innovation. Articles and content were created using place-based guided discovery multimedia strategies to generate original ideas and project creation within rural Appalachian classrooms. Articles ranged in style from general press releases about new updates or developments to The Holler network to more robust interviews featuring multimedia content with links to discussion forums and interaction on theHoller.org. Select articles featured how-to demonstrations for classroom or professional development integration, while other articles introduced new or important concepts in digital education in an attempt to guide readers on how to

engage and focus on creating innovative ideas rather than simply sharing photos of technology.

The *Head of the Holler* digital publication was built using HTML, CSS, and JavaScript and hosted at the www.headoftheholler domain. The first issue of *Head of the Holler* focused on The Holler production studio and a collection of more than 500 hours of original multimedia created using its tools in the first year of operation. The second issue focused on demonstrating how The Holler creates multimedia and the tools and processes at their disposal for their own digital learning goals and projects. For the third issue, the focus shifted to generating ideas and working toward interesting multimedia production techniques for creating engaging and innovative digital learning tools. Each issue was designed to lead readers through a creative and educational process for approaching multimedia design and digital education strategies.

KEYWORDS: (Multimedia, Rural, Appalachia, Online, Digital)

Candidate Signature

Date

THE HEAD OF THE HOLLER: GUIDED PLACE-BASED DIGITAL
EDUCATION IN RURAL APPALACHIA

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The Graduate School

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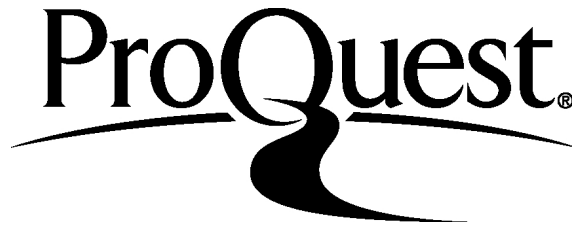
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DEDICATION

This capstone is dedicated to my wife, Natasha, who has supported the process, offered her advice, cared for our two children, and made it possible for me to complete this work. The adventures of Tbird and Sassafras have taken us into so many exciting directions, and we have somehow ended up pursuing our education together. I will see you soon as I read your dedication page and look for my name.

To my children, Finnegan and Vivi, you probably will not remember this whole time of our lives, but it is all for you. I cannot wait to see you build hollers of your own.

To my mother, thank you for making me who I am, for letting me count the stairs of the 99 every time we climbed them, for letting me hang out in the newsroom, and for all of those chocolate milks from the One-Stop Market. I can never thank you enough.

To John, thank you for being a rock and for teaching me how to wire a breaker box.

ACKNOWLEDGEMENTS

This capstone was made possible by the many people who have dedicated their time and interest to my education and the mission to increase opportunities for the young people of Central Appalachia. Thank you to Dr. Curry for leading me through this process and introducing me to the professional Education Technology world. Thank you to Dr. Daryl Privott, Dr. Jeanie Justice, and Dr. David Jones for investing their time and focus for the success of this project and for investing in my growth and education.

Thank you to the Appalachian Renaissance Initiative team for including me in your work and adopting and supporting The Holler. The entire project would not be possible without Dr. Jeff Hawkins and his dedication to innovation in Eastern Kentucky education and trusting me to pursue my passions.

Thank you to all of the people who have helped build and create media in The Holler studio. Jacob Stratton, Klay Maggard, Eric VanHoose, Dustin Potter, Willa Johnson, and Tanya Turner work hard every day to make sure the digital future of Eastern Kentucky will be bright.

Last, but certainly not least, thank you to Cohort 4. Your friendship and advice through this process have as much to do with my success as anything else.

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EXECUTIVE SUMMARY

What is the core of the capstone?

The Holler is an online social learning network designed for digital place-based multimedia implementation in Central Appalachia. The site is partnered with the Appalachian Renaissance Initiative (ARI), a project funded by a federal *Race to the Top* grant through the United States Department of Education. Through the ARI program, The Holler network has access to more than 44,000 students, 3,000 teachers and administrators in 17 rural Eastern Kentucky school districts (Katayama, 2013). The capstone project, a three-issue digital publication entitled *Head of the Holler*, was created to engage users and promote model interaction and creativity on The Holler social learning network.

The *Head of the Holler* was designed to engage and highlight ARI school district teachers and administrators and their work, or potential work, within The Holler's network. The publication featured podcasts, video essays and instructional material, lesson plans, and tips and tricks, and feature-rich multimedia stories starring exemplary teachers and leaders within the Eastern Kentucky region. The content was designed to inform desired behavior on The Holler social network and to celebrate the power users and early adopters of the site.

theHoller.org generated more than 1,000 registered users between its founding on July 1, 2014, to July 1, 2015, with the majority of those registered users being K-12 teachers and administrators working with ARI and the Kentucky Valley Educational Cooperative (KVEC). The Holler's marketing and education process to

these initial users focused on two key elements: the site is not meant to compete with pre-existing tools created by the Kentucky Department of Education, Moodle, or Blackboard, and use of The Holler website should not be mandatory or rigid in its implementation. The ARI program is designed to focus on innovation in K-12 education, to highlight effective examples from Eastern Kentucky teachers and to ensure personalized learning opportunities for every student in every district.

The *Head of the Holler* capstone project was designed to engage new users for theHoller.org and to transition current users from interacting in the most basic of ways, posts about new technology purchased for the classroom and other surface-level sharing, to power users of the site, sharing their process for digital learning innovation. Articles ranged in style from general press releases about new updates or developments to The Holler network to more robust interviews featuring multimedia content with links to discussion forums and interaction on theHoller.org. Select articles featured how-to demonstrations for classroom or professional development integration, while other articles introduced new or important concepts in digital education in an attempt to guide readers on how to engage and focus on creating innovative ideas rather than simply sharing photos of technology.

User engagement and exposure to the *Head of the Holler* was not limited to registered users of theHoller.org. The three issues were made available at www.headoftheholler.org and did not require users to register or login to gain access to the content. The user experience was intended to be like a linear story, with each issue adding to the knowledge base and skill set needed for teachers to think further

about their own digital learning implementation and classroom use. The design and content of the capstone worked to educate readers on the tools available through The Holler.

The most successful online learning implementations feature some aspects of social networking (Kehrwald, 2010). Users must be engaged with one another and feel they are working with others, not alone, as they progress through a program. Many online learning platforms use forums, or discussion boards, and users typically connect on external sites like Facebook and Twitter (Rodrigues, Sabino, & Zhou, 2011). Better integration of social learning and networking would theoretically engage users in a more meaningful way and potentially capture learning or questions as they happen. Few place-based social learning networks have been formally implemented in digital education, and those that did suffered from lack of motivation or understanding of the desired behavior or engagement once on the site (Johnson & Humphry, 2012). The *Head of the Holler* was designed to identify key behaviors and to demonstrate the process of sharing and modeling a potential path for finding innovation in digital learning, a key to success of any social network, specifically in the Eastern Kentucky region (Crumlish & Malone, 2014).

The capstone will refer to many moving parts that make up The Holler network. The Holler refers to the entire organization housed at the University of Pikeville, the multimedia production studio, and of all affiliated websites and content creators throughout the ARI Race to the Top grant. TheHoller.org refers specifically to the social learning website found at that web address and *Head of the Holler* and

headoftheholler.org refer to the digital publication and content created specifically for the capstone.

Who is the capstone meant to impact?

The capstone project is designed to impact educators in the ARI service region who could use The Holler to better meet the growing needs of digital education and personalized learning challenges in Eastern Kentucky. The distribution of information relied heavily on ARI staff and District Innovation Coordinators; seventeen staff members who lead and guide digital learning discussions in each of the ARI school districts.

Each issue of *Head of the Holler* was designed to lead readers through a creative and educational process for approaching multimedia design and digital education strategies. The first issue focused on The Holler production studio and a collection of more than 500 hours of original multimedia created using its tools in the first year of operation. The Holler multimedia production studio is heavily featured in the issue, with accompanying sample media, to inform teachers in Eastern Kentucky of the equipment and processes at their disposal through The Holler and the ARI grant.

- Issue 1 – Original Content from the Holler
 - *Introduction:* A welcome message discussing The Holler network after one year of development and use

- *The Holler Studio*: An article discussing The Holler studio and tools used to create advanced multimedia
- *Studio Gallery* – A photo tour of the studio
- *Hearthstone and Game Theory*: An article featuring Dustin Potter and the video game Hearthstone as a tool for learning statistics
- *Here There Be Monsters*: An article featuring a video game podcast and video show focused on ideas of community and engagement within games
- *Virtual Art Gallery*: The Virtual Art Gallery group on The Holler is the most successful use of the site to date. The article features interviews with creators Kelli Thompson and Christopher Epling
- *Instructional Multimedia*: The curriculum breakdown and accompanying multimedia companion series to the Virtual Art Gallery created in The Holler studio
- *Kentucky Core Academic Standards*: The academic standards met by the Virtual Art Gallery as compiled by ARI staff
- *Scavenger Hunt*: A brief description of a Holler scavenger hunt designed for users to experience the full range of social interaction tools on The Holler network
- *The Appalachian Technology Institute*: An article written by Paul Green of the ARI staff highlighting the new initiative

- *The Holler Learning Management System*: An article promoting a course on The Holler for users who want to offer their own instructional material or professional development opportunities

The second issue focused on showing how The Holler creates multimedia and the tools and processes at their disposal for their own digital learning goals and projects. During the second issue production, more than forty hours were spent live streaming technology builds with Raspberry Pi microcomputers on Twitch.tv but the content focused on how and why the stream was put together rather than offering a how-to guide for following along with the live stream. The key takeaway for this issue was not to build a replica of what was happening in The Holler studio, but rather, provide reasoning and decision making examples for teachers to reflect on when choosing their approach to their own multimedia and instructional challenges.

- Issue 2 – How to Holler
 - *Introduction*: An article introducing the how-to content of the second issue
 - *Livestream*: An explanation of how The Holler streams live video and how bandwidth and equipment needs can affect streams from schools or other live locations
 - *Holler Live Stream*: A breakdown of the Livestream Broadcaster from the Livestream video company

- *Studio by the Numbers*: A breakdown of The Holler production studio and why specific materials or equipment were chosen
- *Building a Gameboy*: An article discussing the link between learning programming languages and creating actual digital products with the new skillset
- *Building the Twitch Stream*: How The Holler put together the camera and equipment breakdown for a live video stream to Twitch.tv
- *How Did It Come Together*: A visual guide to camera placement and equipment use for The Holler's Twitch.tv stream
- *Updating Your Profile Photo*: Multimedia how-to video showing users how to update their Holler profile photo
- *The Holler Activity Stream*: Multimedia how-to video showing users how to use The Holler's activity stream for sharing media
- *ARI Students Leading Region in Computer Science*: An ARI article written by staff member Tanya Turner highlighting Holler projects coinciding with Code.org's Hour of Code week

For the third issue, the focus shifted to generating ideas and working toward interesting multimedia production techniques for creating engaging and innovative digital learning tools. *All for Free*, an article in the third issue about creating student produced news programs with the open-source software Open Broadcaster. The video demonstrates how to attempt to solve a classroom problem with technology. Demonstrating the process of creating multi-camera video news with professional

graphics and Chroma-key technology is featured but the guided multimedia is meant to focus on problem solving with software, featuring both successes and failures, so that readers may attempt the process for themselves with their own content needs. The third issue is the culmination of the project and pushed idea creation and attempted execution instead of highlighting specific projects or piece of technology.

- Issue 3 – Digital Innovation
 - *The Telegraph to Twitter*: Research article breaking down the cyclical nature of technology and how to identify trends in the industry with accompanying video lecture covering key content
 - *All for Free*: Multimedia project showcasing the free Open Broadcaster software for use in student produced multi-camera news production
 - *Pulling the Thread*: An article attempting to identify the procedure for finding innovative and engaging ideas with technology
 - *Thread: Playing Civ*: A video breakdown of the game Sid Meier's Civilization 5 with Esports coach Eric VanHoose
 - *Thread: History and Culture*: A video breakdown of South American culture portrayed in the video game Civilization 5 by University of Pikeville professor Dr. John Howie
 - *Thread: Math and Programming*: A video breakdown of the formulas and algorithms that make Civilization 5 function with Jacob Stratton

- *Fireshare Podcast*: A podcast featuring digital education and ARI by Willa Johnson and Tanya Turner with accompanying discussion about their motivation and challenges in creating the podcast

The three issues may be found in their entirety in the Appendix and the material may be viewed as intended by visiting www.headoftheholler.org.

How was the capstone project implemented?

The *Head of the Holler* digital publication was built using HTML, CSS, and JavaScript and hosted at the www.headoftheholler.org domain. The initial build process consisted of an iOS Newsstand application built using Twitter's Bootstrap framework and Adobe PhoneGap, but with Apple discontinuing the Newsstand in September 2015 (Greenberg, 2015) there was a void in magazine style content delivery to iOS devices. A straightforward website user experience was chosen after examining analytics from theHoller.org and the standalone iOS and Android applications developed for the network.

Examining five months of data, The Holler network logged over 1,200 active weekly users with less than five percent of those users downloading and logging in to the dedicated mobile application. Building *Head of the Holler* as a responsive website allowed for the content to be reformatted for web browsers and mobile devices, depending on user preference (Allen & Chudley, 2012). Holler users, according to Google Analytics, also prefer to engage in the core tools of the site using their personal computers, not mobile devices, and *Head of the Holler* was built to accommodate those users as well.

The most difficult decision in the capstone implementation came from deciding if the *Head of the Holler* content needed to have a standalone delivery system or if the content could be ingested into The Holler's established news platform. The decision to build a dedicated site to house the capstone material derived from the overall desired user experience for the project. *Head of the Holler* was meant to be a multimedia storytelling tool, shared over three issues, and experienced as a cohesive unit. Ideally, the users would start at page one and work their way through the content, starting with general stories about what The Holler had created since its 2014 launch and building to more complex ideas of patterns of technology and identifying innovative ideas and pedagogical practices. The complexity of the stories and content, beginning very simply and steadily asking more from the participants, is more successful as a linear journey. Posting the content directly to the news feed of The Holler could potentially generate more views by attracting viewers already visiting theHoller.org but it would deliver the content based on the date posted and not on any particular goal or flow of information.



Virtual Art Gallery



Figure 1. The first article in a series about ARI's Virtual Art Gallery project.

Figure 1, pulled from the first issue of *Head of the Holler*, features the Virtual Art Gallery Workshop hosted and delivered to K-12 students throughout the seventeen Appalachian Renaissance Initiative (ARI) school districts. The story is segmented into three sections within the issue: an introduction featuring interviews with the workshop creators, a week-by-week curriculum breakdown with accompanying multimedia training broadcasts from The Holler studio, and the Kentucky Department of Education (KDE) learning standards met by the workshop. This article also demonstrates the beginning of the linear guided multimedia discovery process for the capstone project.

Guided discovery should be adapted to address patterns, skills, and comfort levels of the desired audience or learner (De Jong & Wijnandus Lazonder, 2005). The first issue of *Head of the Holler* was designed to introduce readers to The Holler and the multimedia created to date. The Virtual Art Gallery Workshop article features interviews with well known Eastern Kentucky educators with years of experience working in the region, and it features standard lesson plans and KDE standards familiar to any teacher working within the state or a formal education setting. The article reviews material already created and presents the information so new participants may join the workshop but it does not feature any specific call to action or requests for the reader. This article is designed to feel familiar and to begin the merging of the teacher's ordinary world with what is happening on theHoller.org.

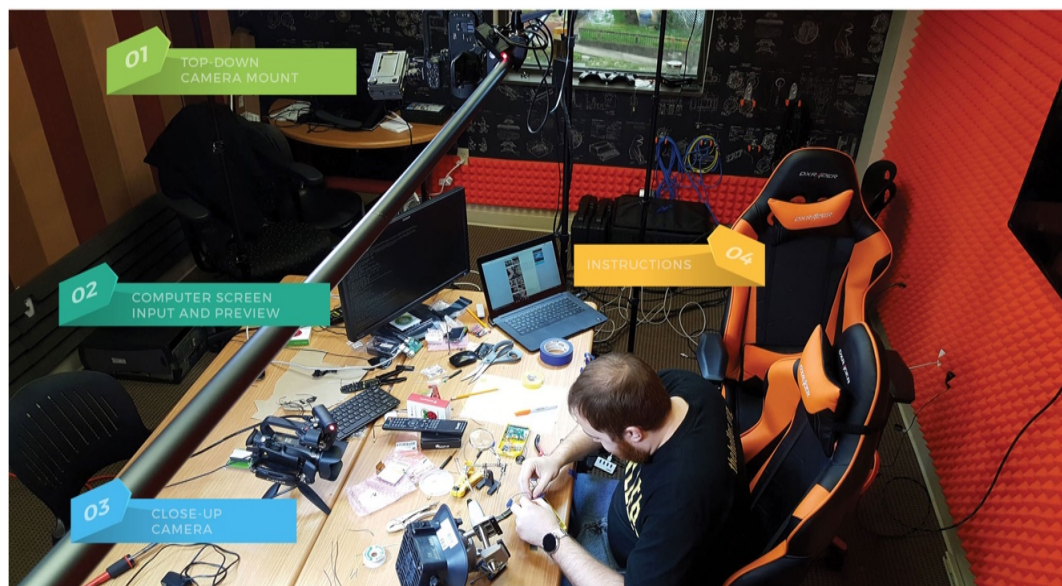


Figure 2. An article from the second issue featuring equipment in use from The Holler studio.

The second issue of *Head of the Holler* features a three-part series of articles about creating real world products with programming skills. The article is written to demonstrate how The Holler actually uses the studio to capture in-depth multimedia coverage and it does not feature how-to lessons on programming languages. The purpose of the article is to continue engagement of first issue readers from The Holler studio tour to a guided walkthrough in actually putting the technology to use for a specific purpose. The first issue mimics the unwanted Holler social network behavior of simply posting pictures of technology and the second issue extends the desired user behavior of explaining the how and why portions of project creation and classroom learning. The Art Gallery Workshop article introduces a new idea and offers complete and ready to use multimedia projects. The articles in the second issue also propose an idea but expand the experience by demonstrating how to actually capture ideas on camera.



Figure 3. An image from the second issue showing the progression of the guided discovery multimedia plan.

The programming language multimedia project is continued through multiple articles with Figure 2 and Figure 3 demonstrating a numbered imaging system showcasing the equipment being used with a corresponding article showing the result of the creative and technical process. The labeling for each image is the same and the full articles begin by showing the actual equipment with descriptions of how they are used with the next article demonstrating the final product and how each of the camera angles and computer inputs translate to a final broadcast image. As with the articles in issue one, the purpose is not to give a step-by-step tutorial meant to reproduce the programming language multimedia videos within a school classroom. The intended result is to guide readers through the creation process and offer a more in-depth understanding of how to capture, create, and share their own ideas and work. This also give the articles of *Head of the Holler* a reach beyond the types of multimedia

created within The Holler studio. Readers who are not interested in gaming or programming can still put the content to use in their own discipline categories.

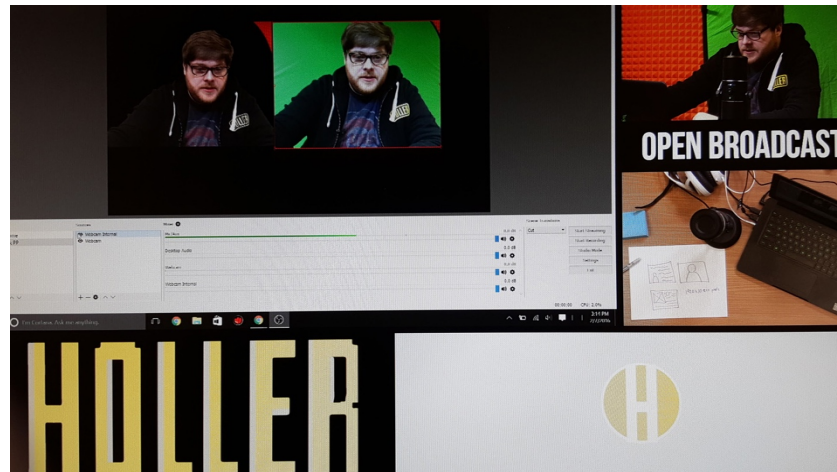


Figure 4. Multimedia material from the third issue of *Head of the Holler*.

The third issue of the capstone featured and article about using Open Broadcast software to create student news productions and it is the final step in the guided discovery multimedia process for *Head of the Holler*. The article consists of a contextual explanation and an accompanying hour-long video presentation. Figure 4 shows the same technology breakdown as the how-to articles from the second issue and the content is geared more towards discovering ways to create and process technology rather than a step-by-step tutorial. Over the course of an hour, the video works through the process of installing new software, attaching common classroom hardware components and figuring out the process of creating multi-camera student news production with polished graphics and Chroma key processing. The video features narration and visual reinforcement through the brainstorming, exploration, and execution of a new software platform. Like the previous articles, the purpose is to

demonstrate a creative process involving technology and idea creation more with the video opening up a potential new process for educators to experiment with software in their own classes.

Why were this capstone and related strategies selected?

Scott Berkun, a technology author and former WordPress employee, has observed striking information on the volume of interaction from the online platform that generates more than 3.4 billion page views per day (Colao, 2012). He suggested what works in one culture, or a particular part of the world, is likely to fail or go unnoticed if simply implemented or transferred to a culture other than the one it was designed for (Berkun, 2013). There are noticeable and successful cultures forming within online learning spaces but less time has been dedicated to building a new platform designed for an established and specific geographic culture. The Appalachian region, long studied for its varying success in educational attainment (Shaw, De Young, & Rademacher, 2004), is a prime example of how a one-stop solution is not possible. Researchers have examined Appalachian resistance to education in the classroom (Hendrickson, 2012) and teachers from Appalachia do not personally relate to outside stereotypes of Appalachian residents. The 1960s stigma that to be successful Appalachian natives must leave the region (Friedmann, 1966) has stuck around and teachers like Joy Crowder, (2014) from Appalachian Ohio, are still fighting this misinformation and stigma. Crowder asserts the students of Central Appalachia have unmet needs and are not guided to succeed in the right ways, resulting in many students abandoning a system that does not address their needs.

Place-based learning offers ideas and perspectives on social, cultural, economic, political, and natural environments as a framework for content delivery and classroom engagement (Smith, 2002). This type of educational pedagogy is not widely practiced in America because it does not fit nicely with standardized testing and requires a great deal of funding to generate curriculum for each place it is implemented (Hendrickson, 2012; McInerney, Smyth, & Down, 2011; Smith, 2002). The Appalshop, a non-profit media arts center in Whitesburg, Kentucky, has been successful in place-based media education with an emphasis on cultural awareness for Central Appalachian residents (Charbonneau, 2009). The youth media program at the Appalshop, the Appalachian Media Institute, has educated young people in the region on media creation through place-based projects centered on documentary and media arts since 1988.

It is important to be cautious when implementing place-based learning modules. While it can be advantageous to identify students with local culture and customs as a motivation to complete work, the generalization or romanticizing of a culture can encourage falsities in their representation (McInerney et al., 2011). With this caution in mind, it is important to note the connection to place-based learning and how individuals process the world and their education through a lens of their own communities and cultural practice. Combining place-based learning in Central Appalachia with concepts of technology and idea generation helps connect bigger ideas and world trends in the technology and education fields with a voice and accent that is at home in the mountains of Eastern Kentucky. In this case, the place-based

connection breaks down the barriers of entry into digital learning by offering a familiar voice for introduction into new ideas and ideology. Deliberately choosing to use these terms in the title of the capstone project immediately identifies the content as locally produced, from within Appalachia, and breaks through the initial barriers some local residents and educators may put up. In the first explanation session to ARI District Innovation Coordinators, when *Head of the Holler* was stated as the title for the digital publication, the room erupted in laughter and conversation began immediately about what content might exist in such a publication. Beginning with the War on Poverty and continuing to present day, much aid or assistance to Appalachia has been from outside of the community. Embracing local terminology as a way to indicate aid and leadership for rural education in Appalachia was essential to the success of the project.

The Holler, and by extension the *Head of the Holler*, relies on place-based learning and a sense of local Eastern Kentucky and Appalachian community to offer an effective place for educators and students to work within digital frameworks for education. The term holler, in Central Appalachia, is slang for hollow, or the area between two mountains. Hollers are known to be geographically isolated areas of small close-knit communities (Veteto, 2013). Understanding the local vernacular is important to understanding how to break through barriers and the term holler is at the center of this discussion. Linda Scott DeRosier (1999) opens her book *Creeker* by emphasizing the lack of understanding from Appalachian outsiders and their inability to differentiate the nuances within the region. Even within Appalachia, traditionally

stereotyped as uneducated, hollers are seen as a secluded and insular way of life. Often, saying someone is from the head of a holler is meant as a derogatory statement.

Using *Head of the Holler* as name for the the digital publication name opens up immediate possibilities for place-based learning to reach Central Appalachian learners in the social and cultural environments they are already use to. It also allows for new digital tools to create connections between individual regions of Central Appalachia that are separated by miles of winding roads and mountainous landscape (Irvin, Hannum, de la Varre, & Farmer, 2010). Based on user feedback and contact, many of the 40,000 visitors to The Holler network since 2014 have browsed to the site to find out what a website called The Holler was actually about. If the site were called Central Appalachian Digital Education Community Hub, there would likely be fewer visitors and less interest from local users. Johnson and Humphry (2012) experienced this lack of engagement with The Teenage Expertise Network in Australia in their difficulties attracting young digital natives for their social learning site. Users were not drawn to the site and did not share or engage at the anticipated rate.

Looking at multiple studies, it may be elements of trust, not bandwidth or access, that are offering the greatest roadblock for a social learning site like The Holler to succeed in Central Appalachia (Chieh-Peng, Chou-Kang, Sheng-Wuu, & Tsai, 2010). Issues of trust in completing online assignments and engaging in purely digital environment are higher in older generations than students in the 18-29,

Millennial Generation range (Ralph & Ralph, 2013). Research shows that using social media as a tool within a course leads to higher interaction between the students and the professors, as well as student conversation with their peers in the class. The struggle for The Holler is two fold: engage traditionally hard to reach Appalachian teachers and students and create a useful and efficient digital tool for idea generation and digital project creation.

The *Head of the Holler* multimedia projects were designed as direct support discovery models, featuring shared ideas, concepts, and suggestions rather than straightforward how-to demonstrations to promote discovery and inquisitiveness among participants (De Jong & Wijnandus Lazonder, 2005). In a brainstorming meeting with four ARI teachers and Holler staff, the teachers expressed an interest for The Holler to provide downloadable lesson plans and assignments for classroom use; however this is counterproductive to the overall mission of The Holler. The guided discovery multimedia model allows The Holler to showcase desired behavior and engagement with the goal of helping teachers process their own innovative ideas and share those with The Holler community rather than content only flowing from the site outward.

When was the capstone implemented

Development of the *Head of Holler* began in August 2015 and issues were released in November 2015, and in January 2016 and February 2016.

Headoftheholler.org featured a landing page where users could select each issue individually. An email was sent featuring a synopsis of each issue to The Holler user

base as well as the District Innovation Coordinators, who forwarded the emails throughout their respective districts. *Head of the Holler* issues were also featured on theHoller.org homepage. Individual stories were shared through Facebook and Twitter to engage users who were interested in a particular subject or video, making additional content available once they had clicked on the link.

Impact of the capstone

Before the capstone implementation, much of the teacher interaction and use on theHoller.org happened through an unguided learning practice: something generally frowned upon in multimedia education pedagogy for its ineffectiveness and lack of clarity for those not already familiar with the subject matter (De Jong & Wijnandus Lazonder, 2005). Through *Head of the Holler*, the learning tools available on The Holler learning network were able to go through multiple onboarding, or recruitment and engagement plans in a short amount of time (Crumlish & Malone, 2014). *Head of the Holler* served first as an onboarding tool for the general Holler user who was referred by a friend or college or discovered the site through an organic search or link. Those users were able to learn about the features of The Holler's social network, learning management system, professional development tools, and were given proper motivation and instruction for moving forward. Through the guided discovery multimedia principle, users of *Head of the Holler* are now ready to generate their own onboarding plan and desired user experience for the students or colleagues they wish to engage through The Holler.

Google Analytics tracking software was installed on both the *Head of the Holler* and theHoller.org to help identify the flow of traffic through both sites and the behavior of each viewer. Google offers the analytics platform as a free installation so website administrators can track metrics like user acquisition, time spent on a page and the site as a whole, how the visitor found the site and many more complex tracking tools (Galbraith, 2014). The software helps offer a surface level quantitative view of the website metrics but interpretation of the data is subjective. In the case of the capstone, the data was analyzed to know how in-depth a viewer interacted with *Head of the Holler*, looking at the number of page views and how users arrived and clicked through the site, rather than relying purely on quantitative metrics to determine success.

According to the Google Analytics platform installed on the site, 452 users viewed *Head of the Holler* content pages 2,045 times from November 2015 to February, 2016. At the same time, theHoller.org registered users grew from 1,273 to 1,791 for an increase of 518 users. The amount of posts has not increased on the site and tracking any change in quality will continue past the timeline of the capstone project. The first issue of *Head of the Holler* featured a teaser for new badges that could be earned by social interaction and exploration of tools on The Holler network. The story was used during an ARI professional training date in November 2015 and the site traffic over two days, up from 1,200 interactions to more than 8,000, was strong enough to crash The Holler servers. Teacher participants were logged in around the clock and even sent questions via email about how to earn specific badges

between 12:00 a.m. and 3:00 a.m. in between the two days of training. While exciting, the badge-earning process alone was not enough to promote long-term meaningful engagement of the site. While many of the users began engaging with site content by commenting on stories, listening to podcasts, sending friend requests, and using The Holler messaging system they did not return to the site with the same vigor after the professional development period was over.

The linear storytelling style of the *Head of the Holler* was not successful. Following the user's behavior through Google Analytics, stories that were linked directly through The Holler, Facebook, and Twitter out performed those that were not direct linked or embedded in another site. Seventy-three percent of all visitors left the site after reading the initial story they were linked to with only three percent of visitors beginning the issue at page one and reading continually through until the end. Of all content, The Holler studio information was the most viewed and many teachers and educators from the ARI region have contacted The Holler requesting studio time for themselves or their students.

Limitations of the study

The capstone was implemented to promote ideas, creativity, and innovation while pursuing digital education and personalized learning strategies for ARI teachers and educators. This is not a short-term process or one that can be easily quantified. Results and analysis thus far are dependent on website traffic and casual user feedback. Long-term tracking will be needed to know the effectiveness of onboarding

and the guided discovery principle on the quality of information shared on The Holler and the translation into the K-12 Eastern Kentucky classroom.

The dissemination of the *Head of the Holler* was also relied on District Innovation Coordinators, email lists, and word-of-mouth. There were not direct connections to teachers and much of the information is timeless, or could at least have a long shelf-life on theHoller.org, meaning engagement levels could continue to grow or change past the implementation period of the capstone.

Many of the Eastern Kentucky school districts also have strict IP address and content filtering rules in place. Many schools have full access to sites like YouTube and Vimeo while others do not. With all of the multimedia from the *Head of the Holler* being hosted on one of those two sites more resources could be allocated to creating content rather than building a self-hosting video solution that would pass all of the district filters. Requests have been made for The Holler's networked sites and content to be whitelisted, or made available without censorship or restriction, but this has not been approved in all districts. This potential limit to access also means some teachers would have to engage in content from their homes rather than during planning periods at their schools. It also limits their ability to share multimedia back to the network because of bandwidth limitations or content restrictions at their schools.

Reflections

The creation of the *Head of the Holler* has been a very important growth process, both for users and the entire Holler network. To date, The Holler has been

operating as a social network first, with content generation as an interesting second-tier goal. After spending the time and concentrated effort to generate original multimedia education tools and writing, and also seeing the increase in traffic and users based on that material, The Holler will now shift to content creation as the top priority and catalyst for social networking and sharing of ideas on the network.

Too much of the initial development period for the capstone was spent focused on delivery methods: should resources be allocated to create an app, build a standalone site, or incorporate the content into theHoller.org? Instead, more time should have initially been spent developing content and allowing that material to drive the decision-making process. The Holler has been a popular discussion topic as it refers to the Race to the Top grant and the work with ARI, but the site has a long way to go with both teachers and students before its use is not extra work beyond what the classroom already demands. The Holler will need to consistently create original content and ideas on the site that draws teachers and students in with the long term effects being a robust discussion happening on the social networking side of the site. The Holler will have to follow this advice and let the ideas drive the conversation and not get caught up in the technology for technology's sake.

The expanded use of digital tools and the reach of The Holler offers interesting data collection and analysis from theHoller.org and *Head of the Holler*. “The move to a participatory online culture sets a new context for thinking about analytics” (Shum & Ferguson, 2012, p. 3). The Shum and Ferguson (2012) idea that traditional institutions can grow and better engage students by developing and

organizing social learning analytics through online courses and learning management system implementations could apply directly to The Holler with data being used in the decision-making process as well as metrics for teachers to measure effectiveness in the search for personalized learning with their ARI students. The social learning analytics, generated by original content on The Holler, will now drive the digital infrastructure and purpose of the site while continuing to promote free and open learning tools to build quality relationships for the digitally curious and industrious residents of Central Appalachia.

The development of this capstone has provided the focus for constructing an engaging and creative environment in a much more controlled and focused way than would have been possible without the program at Morehead State University. What began as a way to learn how to apply educational pedagogy and theory to creative work has evolved into a culmination of experience in graphic design, graduate work in filmmaking, and now doctoral study in education. The entire creative workflow used to build The Holler has changed for the better. Now, instead of creating a project and trying to find the merits and structure for educational use afterwards, all of the tools can be used as one cohesive unit to solve real education-based challenges within the Central Appalachian community.

Leadership

Eastern Kentucky is currently inundated with projects and grant funding to create a new digital economy in the region to offset the collapse of the coal industry (Smiley, 2015). Many of those involved are casting a wide net across the region in

hopes of catching a viable product or plan for moving forward. Now, more than ever, strong leadership is needed to capitalize on the attention and funding being put in place. Leaders who can connect education initiatives to work ready economic structures within the digital economy are critical to moving the process forward and creating actual opportunity within the region. The broadband initiative, bringing fiber Internet to Eastern Kentucky counties, is not enough in itself to facilitate lasting growth (Clair, 2016). Education and understanding within the community will be the pivot point for creating new ideas and executing digital strategies that change the entire economy and educational structure of Eastern Kentucky.

If a new digital economy with workforce ready communities is to form within Eastern Kentucky, leadership must come at all levels and not focus solely on those currently in leadership positions. The first step to breaking down barriers to growth in the region is to enable community members to develop new ideas and build their own processes and initiatives through education and collaboration rather than wait on a step-by-step process that may never materialize (Kouzes & Posner, 2007). *The Head of the Holler* capstone project was designed to be one avenue for Eastern Kentucky teachers to begin creating their own digital initiatives and goals for engaging in new digital tools and strategies so they may become the leadership voice for education in connection with the hope of a new digital economy for Appalachia. If teachers are finding ways to build toward innovation in their classroom and in their profession it will be very difficult for education to be left out of the discussion for moving Eastern Kentucky forward into a new digital reality.

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Head of the Holler - A Digital Publication for ARI Teachers

ISSUES



To view the material as intended please visit:

www.headoftheholler.org





Introduction

The Holler @ 1 year

A little more than a year ago I made a video about a website I wanted to create called The Holler. At that time the site was just a small prototype of what I hoped it would become but there was enough there to start telling others about the project. By chance I bumped into a few people from Kentucky Valley Educational Cooperative (KVEC) during this time, showed them the video and the site, and learned about the Appalachian Renaissance Initiative (ARI). Fast-forward to today and things have changed drastically. With more than 2,000 active members, The Holler is now growing into the social learning network I hoped it would be; and we've only just begun.

Looking back at the video now, it is hard to believe how fast things have moved along. One of the major elements discussed is the lack of coding and creative expression through technology in our region. As I type this there are more than 300 young people from Eastern Kentucky taking programming courses through ARI and the Appalachian Technology Institute. They are currently learning the fundamentals of the form and their next step will be to create whatever they can dream up. The video also expressed my interest in comics and cartooning and the benefits that exist within their creation. During the past year, students from across the region have drawn their own graphic novels, published work, and some are even marketing and selling their creative projects to fuel their next idea.

Both of the projects listed above can be found with a little more detail in this publication; The Head of the Holler. If you have found the link on theHoller.org or have installed the mobile application, chances are you're trying to figure out what this digital publication is all about and what you may glean from it. The Head of the Holler is a new digital publication from theHoller.org created for teachers in

the ARI service region. Each issue will highlight tools on theHoller.org that may benefit you in some way, stories from the region, and content or lessons you can use in your class, including multimedia, instructional design, and the learning standards each lesson will address.

This first issue focuses heavily on The Holler studio, located on the University of Pikeville campus, and the content that has been created through it. The studio is at your disposal as a participant in the ARI Race To The Top grant, I thought the best way to promote it would be to demonstrate what we have accomplished and highlight the tools that could help in our quest for personalized learning and growth within our educational spaces. The final pages of this first issue also include a call-to-action for our readers: sign up for The Holler LMS course to

learn how the platform might be right for your classroom needs and have your accounts upgraded so you can teach courses through The Holler.

I'll leave you with one final story before getting into this first issue. My son, Finnegan, just turned four. For him, The Holler studio is a magical place where

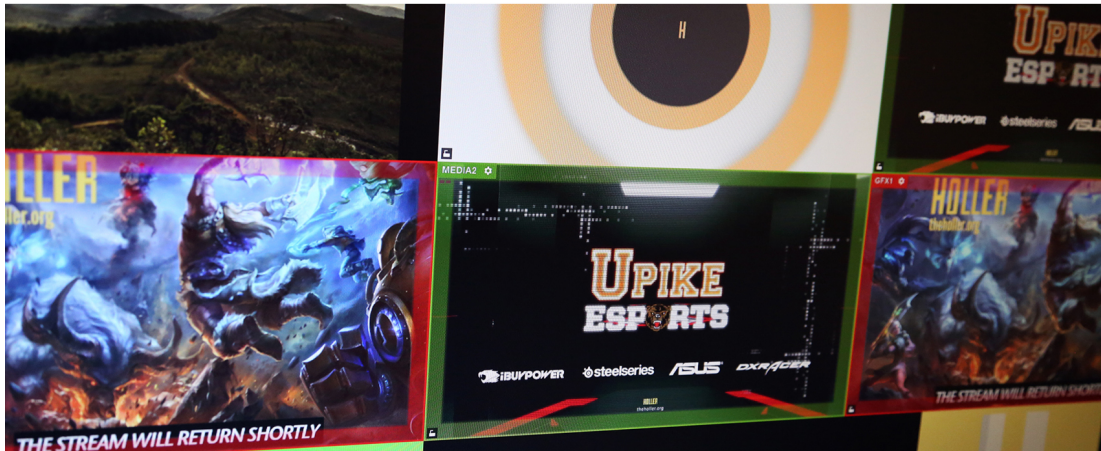


he hangs out with his Dad. There are video games, computers, microphones for him to yell or sing into, and even a iPad robot that chases him around. He loves to spend time in "Daddy's Holler" and we can't drive by the building without him pointing out what is inside and asking when he gets to go back there. The best part about this is his identification with the word "Holler." The studio space and the logo on my shirt are his only association with what the word means, and he's assimilated it to mean "office." When his mother works late he always asks me if "Mommy is working in her Holler?" When my mother picks him up from pre-school he always tells me later that he "played in Mimi's Holler." Needless to say, I think I'll keep him around for a while.

I hope you are able to gain some new tools or material from this new digital publication. If there are specific items you would like us to focus on, please share your ideas. If you need me, or have any questions, you can always find me on The Holler.

Bruce Parsons

@professorparsons – www.theholler.org



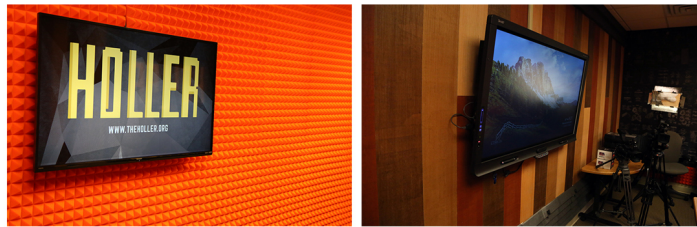
The Holler Studio

Don't Just Stand There // Make Something

The Holler production studio, located on the University of Pikeville campus, has been designed with one goal in mind: if you can imagine it, we have the tools to build it. The facility is split between a studio room where teachers and show hosts interact with cameras and digital technology in front of a camera or microphone, and a control room used to record and produce multimedia products. There are also multiple workstations with all of the software needed for programming, design, and video editing and post production workflows.

If you would like to come in and record a simple voiceover, we've got you covered. If you would like to schedule time to produce a seven-camera multimedia presentation with pre-recorded graphics and animated titles that would look at home in the middle of the Super Bowl broadcast, we've got you covered. Multimedia production, flipped instructional videos and high-quality podcasts can be intimidating but The Holler studio is designed to lessen the burden on media creation by providing tools and production services so teachers and content creators can spend more time focused on message and what students will need to succeed in the new world of digital education.

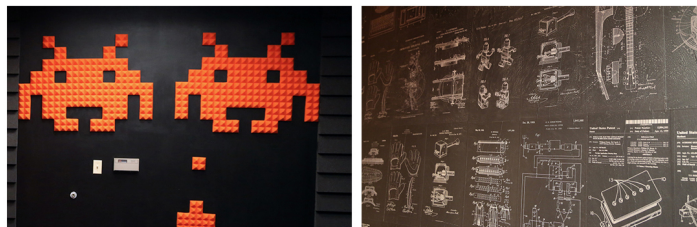
STUDIO ROOM



The studio room offers six different video backdrops for your productions. The “Orange Wall” provides a clean background with a 50-inch flat screen television that can be pre-loaded with graphics or videos for your talk or presentation. The material on the screen can be controlled by you or by production assistants in the control room.

The “Wood Wall” features a more classic background, similar in style to the TED Talk stage, with a 60-inch SMART Board interactive touch panel. The SMART Board panel can be routed into our video production switcher to act as a live input: meaning we can cut to the full-screen graphics on display and not rely on pointing a camera at the screen to show your PowerPoint or Keynote presentation.

The “Patent Wall” is made up of U.S. technology, gaming, and film patents that are wheat pasted (graffiti style) to the wall. The designs include Edison's first lightbulb and film cameras, Atari video game joysticks, and if you look close enough you may find a few Star Wars and Lego references thrown in for fun.



The “Space Invaders” wall is self-explanatory. In designing the studio we ended up with a few extra pieces of the soundproofing material from the orange wall and wanted to do something interesting with it. We decided to map out a pixel by pixel version of the classic Space Invaders game for a more playful video background choice.

The “Chalkboard Wall” comes with a four foot wide Holler logo and the ability to write, draw, and express yourself with chalk to customize the backdrop for whatever you need.

The sixth and final backdrop offers a green screen, or color paper background, for full customization within our studio space. This allows presenters to fully control every aspect of their video, drop it into new environments that correspond with the lessons or drop directly into their presentations to put a face to the information being delivered.



THE CONTROL ROOM

The Holler studio control room is wall-to-wall technology. We would have installed even more but we literally ran out of space. The centerpiece is a live streaming and video editing workstation consisting of a Livestream production switcher and Mac Pro editing computer with the Adobe Creative Cloud software suite.

The Livestream production switcher has the ability to incorporate up to seven live camera inputs, with two coming in remotely from anywhere with adequate bandwidth to connect to our server. The switcher is equipped with three graphics channels and two media pools allowing for seamless cuts and edits between many different types of multimedia materials. The switcher also has live chroma keying (green screen capability) and a studio surface controller for a full newsroom-style production process, along with a 32-channel audio mixer.

The productions are recorded in full HD onto solid state hard drives that can be immediately transferred to our Mac Pro editing station and exported to YouTube, Vimeo, and ultimately posted on The Holler. The switcher and studio have the ability to create a real-time linear workflow that translates to this: when you finish your presentation or lesson, the video is already uploading for your students or audience to access.

The control room also consists of two custom built PCs with the full Adobe Creative Cloud suite, the UNITY game programming engine, Open Broadcaster software for Twitch streaming and SteelSeries Eye Trackers for vision science training and research from the Kentucky College of Optometry and UPIKE Esports program. Rounding out the control room space is an iMac with all of the above software and our console gaming wall with a 50-inch screen and a Sony PS4, XBOX One, and Wii U gaming system. The Holler is also a certified Nintendo game developer with a couple of projects in the works that we will be excited to share with you in the future.



MOBILE STUDIO

Possibly the most important aspect of the Holler studio: it is completely mobile. We can pack up our 11 cameras, audio gear, and portable Livestream production switchers and produce live shows from anywhere. The shows can be recorded in full HD and uploaded later or streamed live across the world with adequate bandwidth. Live streams also allow for real time text-based chat with viewers and producers through the Livestream platform. The Holler and the Appalachian Renaissance Initiative just completed one of the largest live stream broadcasts in Kentucky history with 10 locations live in HD, simultaneously, from the East Kentucky Expo Center in Pikeville, Ky., for the 2015 Promising Practices Summit.

EQUIPMENT CHECKOUT

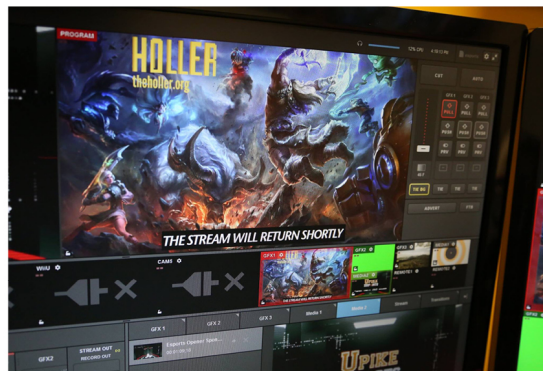
Soon, theHoller.org will feature an equipment list with an availability calendar and check-out procedures for schools within the ARI service region to use our cameras and multimedia production materials. Check back on The Holler for more information.

Studio Gallery

See the entire studio



The full Livestream console at the Holler allows for more than seven live inputs and can publish video around the world.



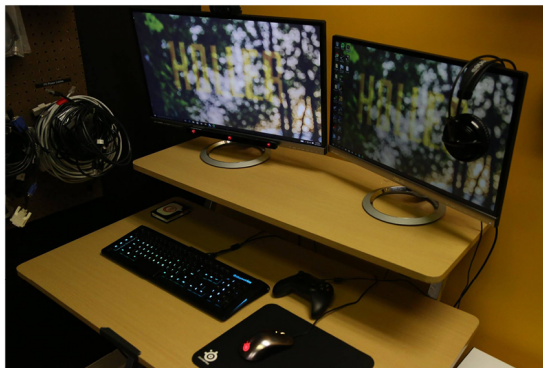
Using the Livestream production software, we can implement PowerPoint and Keynote presentations along with graphics and prerecorded video segments.



The Wood Wall features an interactive SMART display that also serves as a video input in the Livestream production switcher. This means we do not have to rely on a camera pointed at the screen.



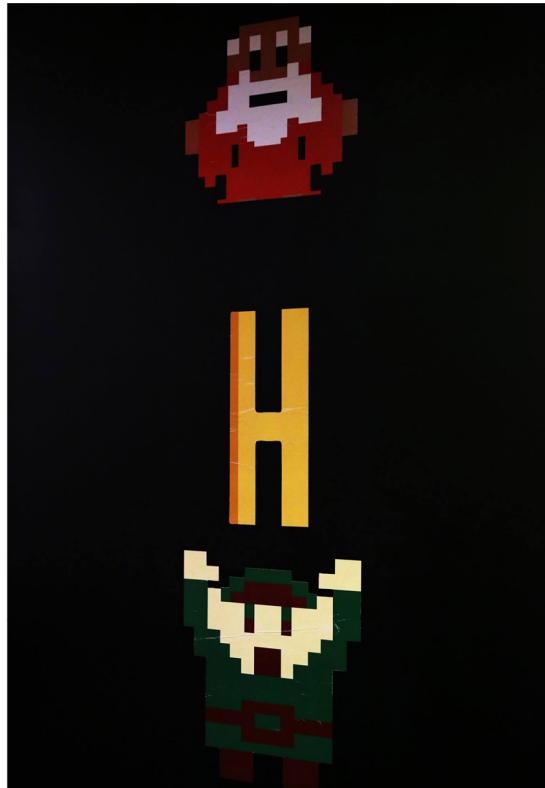
The studio production board allows producers to easily adjust audio levels and switch between shots and inputs.



The Holler studio has four full editing and creation stations in the Control Room with even more portable gear in the equipment room.



This is an example from a UPIKE Esports live broadcast streamed to Twitch.tv with full green screen chroma support.



It's dangerous to go alone ... take The Holler.



The orange wall and Space Invaders Wall make great backdrops for video production.



The console wall in the Control Room houses our XBOX One, PS4, and Wii U gaming consoles. This is also where we test our own original game design and video editing projects.





Hearthstone and Game Theory

... or how I learned to stop worrying and love math.

by Dustin Potter

I enjoy learning, and I want others to share that joy. I think everyone likes to learn; most people just don't realize some of their favorite things are teaching them as they go. Anything, from reading for a class, to enjoying taking apart an old car, or getting a new video game to play, all involve different levels of learning. These are just a few of the ideas I hoped to express with my very first show for The Holler.



I chose Hearthstone for this project because of how deceptively simple the game seems to new viewers. On the surface it's a card game with straightforward rules and a clean interface. However, the further you get into the game the more complicated the game

becomes. The introductory episode is meant to introduce people to the game and how it's played; the easy stuff. From there, things will get a bit crazy and a lot more in-depth. I want to explore how different logical fallacies work into games regardless of their genre or objectives. I also hope to show how statics play a role in the outcome of situations and challenges with the game. Most of all, I want people to see how all of things they learn from this game can be applied in their lives and educational process.



We're in a new age of learning. From now on kids will be able to read their children's books on mobile tablets and they will hang out with friends in a game lobby and not always on a street or in a park. They will learn about the world through a series of pixels changing colors rapidly on their screens, and everything they could ever want to know is just behind a few keystrokes. With this easily acceptable information available to everyone, the only thing we have to do is instill a thirst for knowledge and a structure for finding the information hidden in this new digital world. A drive to learn can change a child's life more than any single lesson and that is my motivation for working on shows for The Holler social learning network and what I hope to convey as we all experience how much fun it is to discover something new.



Here There Be Monsters

Establishing connections through gaming.

Here There Be Monsters (HTBM) is a collective of gamers who work in The Holler studio to showcase their gaming interests, the skills they have picked up along the way, and potential routes for applying those skills to academic endeavors and jobs. The first episode features short profiles on the core HTBM crew and offers some insight into gaming as more than just playing games.



An introduction to the HTBM crew.



Middle school student Luke Ray on Minecraft and his love of games.



Bruce Parsons hacks his way through a fun new indie game.



Tiffany Grimm reviews Rogue Legacy on the PS4.



Blue Screen of Death

with Klay Maggard

Started while a student at UPIKE, Hazard, Ky., native Klay Maggard began producing Blue Screen of Death (BSOD) episodes from The Holler studio as a way to showcase technology and multimedia from within Eastern Kentucky. The first episode shows Klay building the custom gaming PC in The Holler studio. He takes a pile of parts and turns it into a powerhouse computer while explaining how and why he makes each decision.

Klay is now 2nd. Lieutenant Maggard in the U.S. Army and will continue his podcast while stationed in South Korea.



Watch Klay build The Holler's custom PC in the first episode



Esports and Vision Science Academy

News from UPIKE.edu

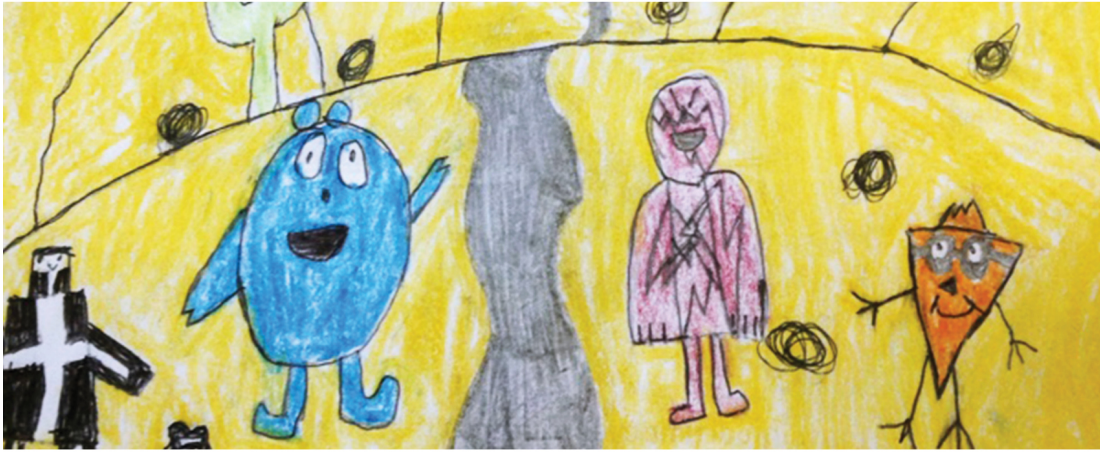
Area high school students sharpened their technology skills and learned about the science of vision in a setting centered on gaming during the University of Pikeville's first Esports and Vision Science Academy.

An interest in video games led to a broader learning experience. During the two-day camp, students deconstructed and rebuilt a computer and received tutorials in shooting video and working with green screens and lighting. Students also recorded and edited their own videos for Twitch.tv, a live streaming video platform primarily used for gaming.

"Students were surprised to learn how much vision science is incorporated into technology, Esports and Twitch.tv broadcasts including how a video camera is similar to how an eye functions or how green screens work by preferring certain wavelengths," said Eilene Kinzer, O.D., senior clinical instructor of primary care optometry and ocular diseases at the university's Kentucky College of Optometry. "Vision training can help improve hand-eye coordination and peripheral awareness, as well as eye movements when looking across a computer monitor."

The academy was hosted by the University of Pikeville-Kentucky College of Optometry, UPIKE Esports program and The Holler, a social learning network designed for users in Central Appalachia.

Participants in the camp included: Luke Ray from Mullins School; Jared Stanley from Shelby Valley High School; Cade Looney and Sam Childress from Riverview Elementary/Middle School; Cody Blankenship and Abigail Thornsby from Grundy High School; Joe Steele from Pikeville High School and Josh Griffith from Pike Central High School. UPIKE students Aaron Asbury and David Chapman assisted with the camp.



Virtual Art Gallery

The success of a community.

Christopher Epling has been a great example of what is possible on The Holler social learning network. Taking advantage of all of the tools at their disposal, the Virtual Art Gallery traveled through the region creating in-person videos at a new school each week. Sessions were recorded on location and later posted to The Holler. Epling would also visit The Holler studio on a bi-weekly basis and create more focused and hands-on tutorials for students to follow along while they worked on creating their stories. During the height of the project, the 130 sub-holler members accounted for 75% of the daily traffic on the site.



Kelli Thompson talks about the success of the project and the new additions happening now.

The Holler social network feed allowed Epling and the students throughout Eastern Kentucky to converse through a digital platform, with students sharing their works in progress and Epling providing feedback and encouragement on how to move forward. The Virtual Art Gallery forum allowed for content to be broken into categories and individual questions to track user comments and engagement across a longer span of time. Students and teachers shared artwork on a regular basis allowing for collaboration and sharing across districts and schools, connecting students who otherwise may not interact with one another.

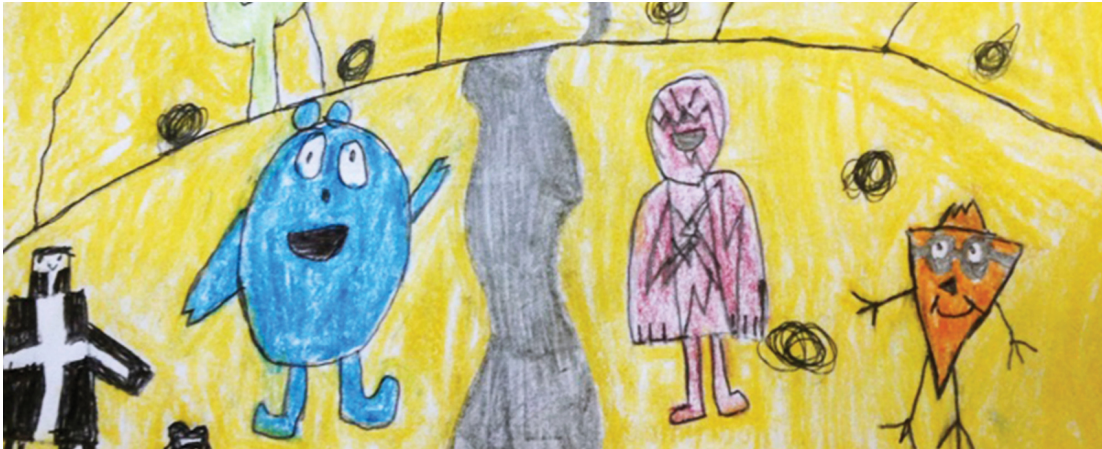


Christopher Epling discusses his goals for the project.

Takeaways from the first Virtual Art Gallery session will be an important contributing factor to upcoming theHoller.org website and social network updates. Soon, there will be a new media upload tool and the ability to tag people in the photograph or artwork that is being uploaded. The most successful elements of the sessions involved the how-to components of Epling's work rather than just the finished products. Going forward, this idea will be very important and will inform the best-use scenarios for sharing information on The Holler.

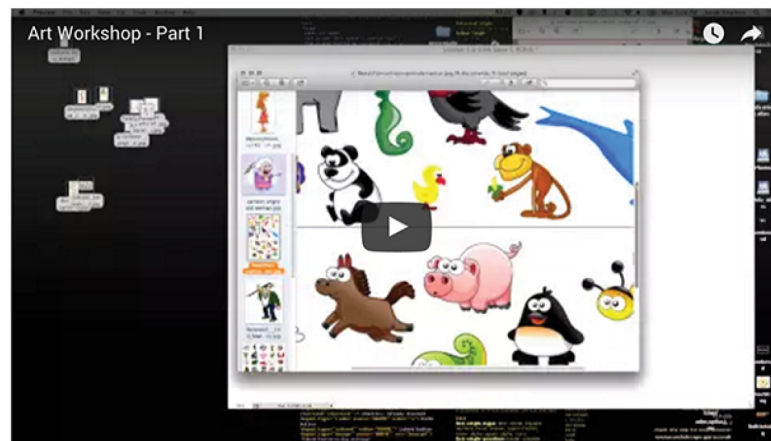


UPIKE students David Chapman and Eric Helvey profile cartoonist Christopher Epling.



Instructional Multimedia

Follow the progression of the Art Workshop.



Week 1 Introduction

- Formatting a story idea
- Examples given of different types of story documents.
- Encourage student creativity and uniqueness

Have Ready for week 2:

- Choose story
- Choose a story layout
- Holler discussion: Research various artists, illustrators, and authors.



Week 2: Words with Pictures Part 1

- Drawing characters
- Setting, plot, rising action, etc.
- Building the story—Words to pictures
- Begin storyboard creation

Have Ready for week 3:

- Begin storyboard
- Holler discussion: Research how characters are drawn.

Week 3: Words with Pictures Part 2

- Continue building the story
- Continue creating characters and setting

Have Ready for Week 4:

- Complete story board with story and drawings for each page.
- Holler discussion: Research how various settings, landscapes, and structures are

Week 3: Words with Pictures Part 2

- Continue building the story
- Continue creating characters and setting

Have Ready for Week 4:

- Complete story board with story and drawings for each page.
- Holler discussion: Research how various settings, landscapes, and structures are drawn.

**Week 4: Pencil Your Page Part 1**

- Draw each page complete with pictures (leave room for words) just as you would have them appear in your book.
- Pencil in pages from the storyboard.

Have Ready for Week 5:

- Have at least half of your book completed by penciling pictures on each page.
- Holler Discussion: Research various ways to put words on a page.

**Week 5: Pencil your Page Part 2**

- Continue drawing each page complete with pictures just as you would have them appear in your book.
- Pencil in pages from the storyboard.

Have Ready for Week 6:

- Complete the remainder of your book with pictures penciled on each page.
- Holler discussion: Share your pictures and techniques.

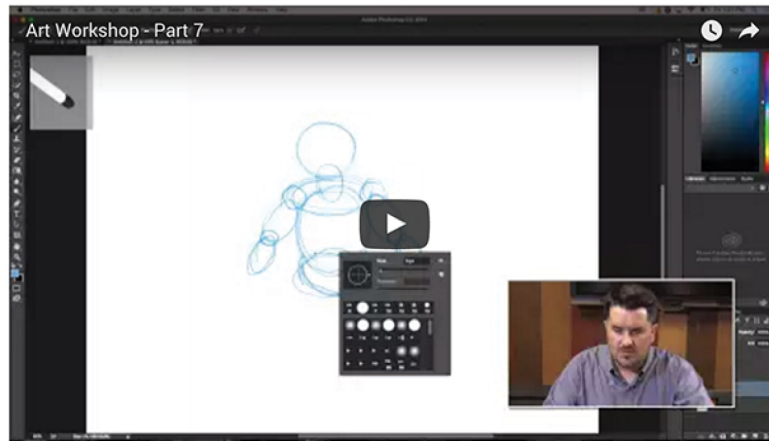


Week 6: Adding Words to your Drawings

- Words on each page

Have Ready for Week 7:

- Words on each page of the book.
- Holler discussion: Share pages of your book.

**Week 7: Adding Color to your Words and Drawings**

- Color on pages
- Cover and logo
- Creating a synopsis, forward, highlights, and overview of the book. (Pique the curiosity of the audience.)
- Author/Illustrator as a business

Have Ready for Week 8:

- Scan to make an electronic copy of completed book.
- Prepare to present during Week 8
- Holler Discussion: Share trailer of your book. (Apple i movie) Students will vote on which book they want to hear on week 8.

**Week 8: Share your Story**

- Students will share their book.



Kentucky Core Academic Standards

for the Virtual Art Gallery Curriculum

Carole Mullins, KVEC Instructional Specialist

KCAS Anchor Standards for LANGUAGE

Standard 1	L.CCR.1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
Standard 2	L.CCR.2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
Standard 3 (6-12)	L.CCR.3: Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.
Standard 4	L.CCR.4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content.
Standard 6	L.CCR.6: Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

Standard 1	SL.CCR.1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
Standard 2	SL.CCR.2: Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
Standard 4	SL.CCR.4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

KCAS Anchor Standards for Writing

Standard 3	W.CCR.3: Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
Standard 4	W.CCR.4: Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
Standard 5	W.CCR.5: Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
Standard 10	W.CCR.10: Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

KDE ARTS/HUMANITIES Program Review

Curriculum and Instruction:

Demonstrator 2 Aligned and Rigorous Curriculum	
Indicator b	To what extent does the school ensure that the arts curriculum provides for the development of arts literacy in all four arts discipline and also utilizes the Common Core Standards for English/Language Arts?
Indicator c	To what extent does the school ensure that the school's curriculum provides opportunities for integration as natural cross-curricular connections are made between the arts and other content areas?
Demonstrator 3. Instructional Strategies	
Indicator b	To what extent do teachers systematically incorporate all three components of arts study: creating, performing and responding into the arts?
Demonstrator 4. Student Performance	
Indicator d	To what extent do students, with teacher guidance, routinely use creative, evaluative, analytical and problem solving skills in developing and/or reflecting in their artistic performances and products?

Demonstrator 1. Assessment	
Indicator a	Teachers should use multiple assessment processes to inform, guide, develop and revise instructional strategies and curriculum to enhance to student learning and achievement.
Demonstrator 2. Expectations for Student Learning	
Indicator a	Teachers communicate consistently high expectations and use common standards for student learning in Arts & Humanities.
Demonstrator 3. Assessment for Teaching	
Indicator b	To what extent do teachers regularly provide students with authentic, meaningful and documented feedback from a variety of sources on their performances/products so students may strengthen their future performance/products?

KDE WRITING Program Review

Curriculum and Instruction:

Demonstrator 2.	
Indicator b	To what extent does the curriculum integrate the strands of literacy (reading, writing, speaking, listening and language use) across content areas to explicitly instruct and develop communication skills?
Demonstrator 3. Instructional Strategies	
Indicator a	To what extent do teachers, students, and others provide literacy instructional strategies and models that assist in achieving specific learning objectives?
Indicator b	To what extent do students research information to seek a new or deeper understanding around a topic and demonstrate new understanding through products?
Indicator e	To what extent do students use varying strategies and demonstrate an understanding of communicating to audiences in different forms for various purposes?
Indicator f	To what extent do students engage in discussion with teachers and peers to inform the writing process and publish/share their work?
Demonstrator 4. Student Performance	
Indicator a	To what extent do students craft communications distinctive to specific disciplines and purposes?
Indicator c	To what extent do students learn and work together with teachers, peers and others, either face-to-face or virtually, to problem-solve and generate products/outcomes tied to curriculum and learning goals?

Demonstrator 1. Assessments	
Indicator c	To what extent do teachers, peers and others provide regular feedback on students' writing and communication products as part of a constructive feedback process that is subsequently applied by students to improve their communications?
Demonstrator 2. Expectations for Student Learning	
Indicator b	To what extent do teachers and students collaborate to set writing and communication goals that are standards-based and informed by feedback and assessments?



Scavenger Hunt

Earn badges on The Holler

The Holler has a new path for achievements designed to help you learn about the tools and features at your disposal within the site. Below you will see a handful of the available achievements hidden within the site.

Begin your journey by focusing on the following two categories: your Holler profile and sharing with the community.



YOUR PROFILE

Your profile on the Holler will allow users of the site to know who you are, where you're from and potentially identify with a photo or visual representation of yourself or your personality. Begin by looking at your profile information and attempting to change your profile picture.



COMMUNITY

The Holler differs from other social networks by putting community and collaboration first. Take some time to post on the activity feeds, join a few Hollers, send messages to other users and send and accept friendship requests to unlock a series of achievements.



The Appalachian Technology Institute

by Paul Green

The Appalachian Technology Institute (ATI) is being designed to bring world-class educational opportunities to students in the mountains, but also to stimulate economic growth. By creating a culture of innovation, while at the same time leveraging resources such as area wide broadband Internet access, the ultimate goal of the ATI is to bring about systemic economic change to the region. While idealistic, it is believed the ATI could be a driver that will help shape the future of an entire region.

The Appalachian Technology Institute design gives students opportunity for access to high-level curriculum aimed to help them compete in a global economy. The ATI is an alternative approach to teaching and learning in schools. It does not follow traditional school models. The core philosophy of the ATI is to not only expose students to courses such as computer programming, aviation and aerospace engineering, but also to enhance skills in critical thinking, creativity and collaboration. The vision of the Appalachian Technology Institute is to create a technological Appalachian Renaissance by creating a culture of creativity, innovation and design thinking in our youth. The Appalachian Technology Institute will be THE model of rural innovation and technology education in the nation. It will also leverage K-12 education as an economic driver of Central Appalachia.

The educational program being developed will allow students in Eastern Kentucky to compete in the global economy. KVEC will lead the initiative and will work with multiple groups, including private business, foundations, public post-secondary institutions and government agencies to develop a comprehensive educational model. In order to do this, a central hub (virtual center) will be created to lead the program and pull all of the resources together. This center will have similar attributes to an area technology center; however, the design will have a much larger scope. The center will not be limited by geographic boundaries or travel time on buses. Instead, the center will

be a virtual hub that will use technology to provide opportunities to all students in the region. The hub will serve as the epicenter of the ATI. The delivery model will be a hybrid approach, which will include online, virtual, face-to-face, and blended learning opportunities.

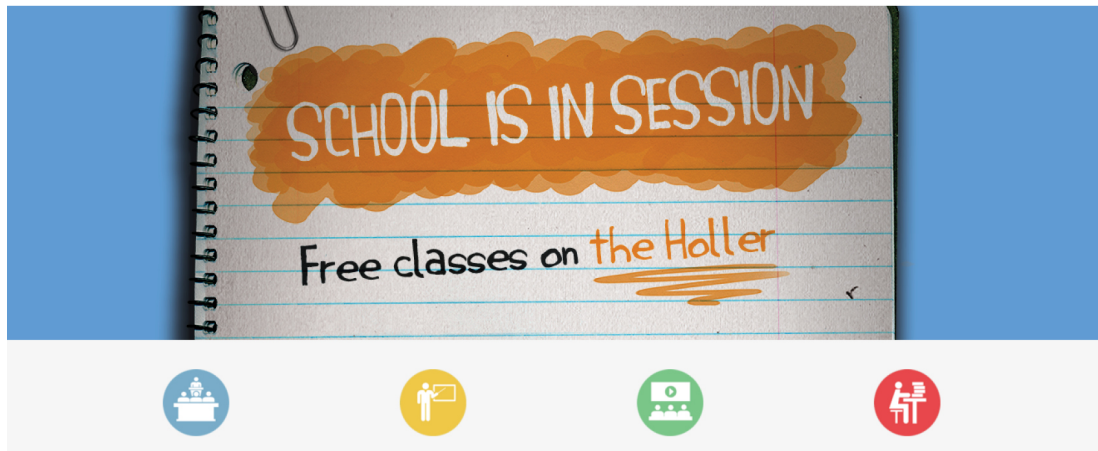
Through the hub, area teachers from the region will develop, instruct, facilitate and support courses for more than 19 school districts. These teachers will be independently contracted through the ATI and have office hours to assist students in virtual environments. They will be available during and after school hours, and also on weekends. These teachers will also construct future courses for the Institute. The ATI's teachers will also work with several outside partners for course and curriculum development. These partners include but are not limited to: CodeHS, Institute for Aerospace Education, Apple Corporation, Google, Microsoft, and Boeing. The ATI will also have several post-secondary partners, including Morehead State University, Eastern Kentucky University and the University of Pikeville.

Students will use the online platform theHoller.org to receive the content and curriculum. TheHoller.org is a social learning network developed for the people of Central Appalachian. It was created by Bruce Parsons and partially funded using a Race-to-the-Top District award. The site was created to promote learning and economic development in central Appalachia (theHoller.org). The use of this site allows for local and regional facilitators to be available to support and assist students. Both synchronous and asynchronous approaches will be used, as students will have access to facilitators and instructor through video conferencing, forums, chats, and blogs.

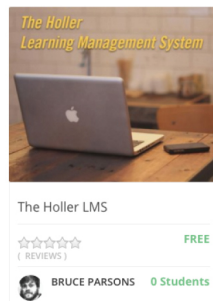
The ATI hopes to create systemic change in the region by identifying past failures and working to bring about innovative approaches to learning. The ATI also wants to leverage the expansive digital opportunities and give every student in the region access to a world-class education. No longer is it acceptable for a student in Jenkins, Kentucky not to have an opportunity to take courses in contents such as aerospace or computer science. In the words of Harbison and Meyers (1968), "education is both the seed and flower of economic development" (p. xi). The ATI not only needs to be the seed and flower, but fertilizer as well!



Paul Green on Disruption



The Holler Learning Management System



The Holler Learning Management System is designed as a linear delivery tool for full online courses, or for modules within a larger lesson or group. You can offer a course open to the entire Holler userbase, or you can develop a course or module for a specific group of students or schools.

Learning the system and assessing if it can meet the needs of your classroom or instruction plan will be a vital component of The Holler's growth and development over the next year. To become an instructor on The Holler, all you need to do is register and complete the "Holler LMS" course. This course will begin

December 7, 2015, and the first batch of teachers and instructors will have full access to the LMS. Sign up for the course now to find out if the Holler's LMS is right for your online instruction needs.

Register for the Course



HOW TO HOLLER

Issue 2



How to Holler

Head of the Holler Issue 2

The first issue of Head of the Holler was designed to draw attention to the capabilities of the Holler Studio and website, as well as feature some of the interesting multimedia work created over the last year. In this issue, we are going to focus on how The Holler works and how to build out your section of the community and produce your own multimedia.

From the beginning, The Holler has always been about creation. Some of the articles in this issue will help you update your profile image, join some Hollers, and earn badges. We are also going to dedicate time to live video and Twitch.tv production. You will learn how we go about these projects and open up the conversation to what you would like to produce or questions you may have about moving forward with a project.

My philosophy when it comes to media production is to jump right in, so let's get started.

Bruce Parsons - @professorparsons



Livestream

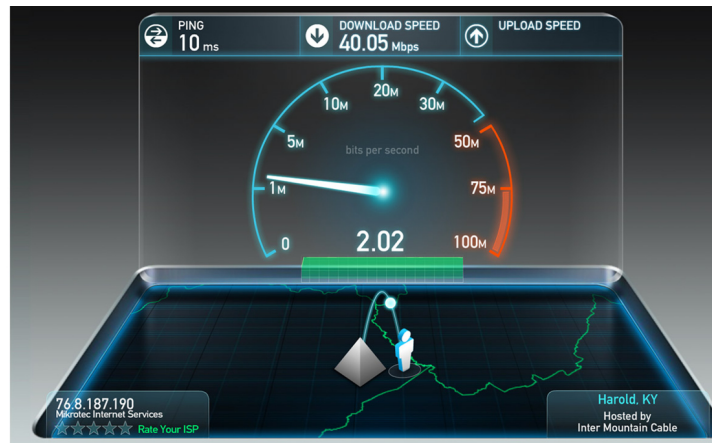
How we stream at The Holler

The Basics

Streaming live video is easier than ever, but it is not without its challenges. Many schools and organizations are interested in streaming live, but may not know where to start. We have been working very hard at The Holler to streamline the process and would like to outline our methodology and tips for those who are interested in creating their own streams.

We will begin by discussing bandwidth. Typically, Internet users are concerned with the download speed of their connection, meaning how fast information can transfer from a server to a computer, smartphone, or tablet. When we talk about live streaming, we will need some download speed but are primarily focused on our upload capability. The upstream, in terms of bandwidth, is how fast your Internet connection can deliver material from your PC, smartphone, or tablet to the outside world and to servers across the Web. Download speed has become relatively inexpensive and is getting better all the time. Upload speed, however, can still be tricky and is often far more expensive or simply unavailable in rural areas.

In most situations, you will see your bandwidth written or represented as 10/1 or 20/3. The first number refers to your download speed and the second is your upload speed. Unless you are live streaming audio, video, or uploading files to sites like YouTube and Dropbox, you are not going to worry too much about upload speed. Before committing to a livestream event or investing in equipment, it would be best to check the bandwidth capabilities at the site you wish to stream from. Do not take your Internet Service Provider's (ISP) package, or the amount of bandwidth you pay for, as being sufficient. Those numbers are best estimated and best case scenarios. The reality of your



bandwidth can differ greatly by the time of day, physical location, and how many people are accessing the network. You can check your speed by using the free service: <http://www.speedtest.net/>. This service is available via your Web browser and as a free mobile application for both Android and iOS devices. Check your bandwidth multiple times, from different devices, and at different times throughout the day.

As a rule of thumb you will need the following speeds for video streaming:

3 Mbps - 6 Mbps - 1080p
 1.5 Mbps - 3 Mbps - 720p
 500 Kbps - 2 Mbps - 480p
 300 Kbps - 700 Kbps - 240p

Mbps = Megabits Per Second // Kbps = Kilobits Per Second // 1,000 Kbps = 1 Mbps

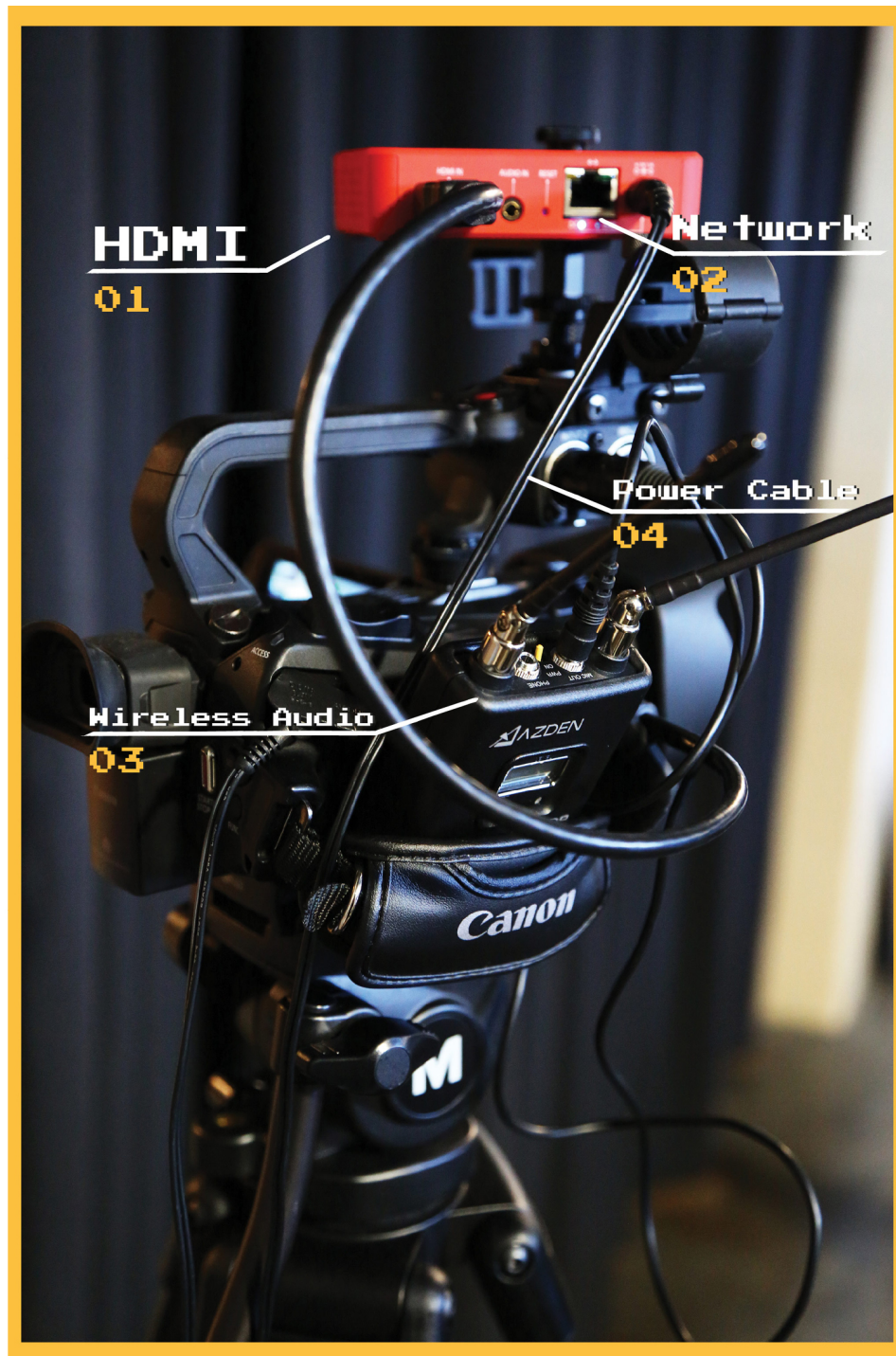
To get a good idea of the differences in speed and image quality, go to YouTube and choose a popular video. In the bottom right corner you will see a gear icon. If you click it you can choose what video quality you would like to view and learn the difference between each of the above settings.

It is important to keep audience in mind when planning your stream. It can be easy to fixate on thinking you need a 1080p full HD stream, but if the majority of your audience will be tuning in via cell phone using mobile data, a stream that data rich will actually be a detriment and could deter people from tuning in as they do not want to dedicate that much of their data plan to your content. If you are trying to stream at the lowest end, or worst quality to push a stream out to the public, you may also disappoint your audience if they are in a classroom setting with 20 or more students watching a large HD television or screen and your image is blurry and audio hard to understand. In this situation, it would be better not to stream at all and offer the full resolution video via YouTube or Vimeo, after the fact.

Equipment

There is a large number of live streaming companies and varying equipment available to transmit video from your camera and computer to viewers across the world. The Holler uses a company called Livestream because it fits within our budget and offers comprehensive tools to meet our needs. Chances are your live stream needs will not be as demanding as The Holler's studio production. This should be taken into account when budgeting or planning for your implementation. The purpose of this article is to make you aware of what is available and introduce you to how we stream from The Holler. Livestream does offer a free account and a desktop producer that incorporates your PC screen as well as a webcam and multiple sound inputs.

The most entry-level equipment available for purchase through Livestream is the Broadcaster; we refer to it as the "Red Box." A fleet of those broadcasters allowed us to successfully stream from 10 concurrent sessions within the East Kentucky Expo Center during the Appalachian Renaissance Initiative Promising Practices Summit.



Holler Live Stream

Equipment breakdown: Red Box

01 - HDMI

The HDMI cables transfers HD video and sound from the camera to the Livestream box. The “Red Box” takes that signal and converts it to an MP4 file, which is ompressed for Web streaming. The uncompressed signal coming out of the camera is too large to stream online so the Livestream box must compress it accordingly. When you broadcast live from your PC, whether it be SKYPE or Google Hangouts, that software in conjunction with the hardware in your computer are compressing the file for you. Generally speaking, even the highest quality video cameras cannot do this without an extra attachment or connection to a computer.

02 - Network

In the example pictured above, we are using WIFI in the Livestream box to connect to the network and send audio and video to the Livestream servers where it is distributed to potential viewers. Your stream does not go directly to viewers so you may notice a 30-second to one-minute delay when trying to preview or watch your content online. This is normal. While WIFI may work in many instances, best practice would be to use a hardline wired connection for better speed and stability. Remember, you are concerned with the up stream of your network connection, or the speed in which your network can communicate with the streaming server.

03 - Wireless Audio

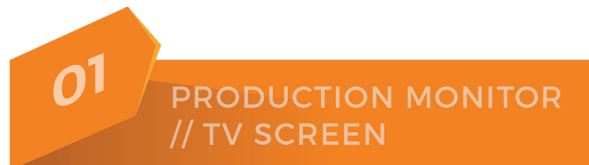
For our stream, the camera was more than 20 feet away from the subject. If we were to use the on-board camera microphone to capture audio, we would have heard the subject speaking, along with any other sound or conversation happening within 20 feet. By using a wireless microphone we were able to isolate the person speaking and minimize background noise. If you do not have access to a wireless microphone, you can achieve the best audio possible by adjusting the proximity between the camera and the subject. The closer the two, the better your sound will be.

04 - Power Cable

Both the Livestream Broadcaster and the camera have battery packs attached. If you look closely at the image you will see we have plugged both in to AC adaptors. Just like the network connection, best practice is to plug the devices into power from an outlet to insure constant connection and rely on battery power only for emergency situations. If you travel frequently for live streaming production, add an extension cord and power strip to your camera bag. Minimizing smaller issues like power can allow you to focus attention on the network and producing a high quality stream.



Studio by the Numbers



We have covered the Holler studio in monitors to use as set backdrops and to allow talent, or the person appearing on camera, to see themselves or their presentations while recording. Many schools are equipped with Mondo Pads that could be used in the same way.

For an interesting backdrop you can always use large computer monitors or TV screens as a backdrop for your production. Make the most out of what you already have on-hand and incorporate the technology in a useful manner. Seeing yourself while you film can be intimidating at first, but with practice it will help your onscreen performance tremendously.

If you look in the background of the photo you will notice a SMART Board behind me while I take the picture. On the board we pulled up The Holler website for a simple backdrop. We use websites quite often as backdrops because they're free and easy to access and they can offer simple motion and texture without being overpowering or distracting in the frame. Green screens can be fun to use but they also add extra work when taking out the color and replacing it with an image; using a TV in place of a green screen can get you up and running a little faster, especially if you're not filming in a studio or controlled environment with adequate lighting.

02

SOUNDPROOFING // ORANGE FOAM

The orange wall in The Holler studio looks good on camera, but it actually performs a very important function: keeping the sound from reverberating or bouncing around the room. We chose to use orange foam so it could also serve as a backdrop but if you're trying to focus on audio, there are very cheap and easy methods for reproducing studio foam. Foam mattress pads, foam shipping pads, and cardboard egg cartons can all help block sound from bouncing the room you're recording in. Make sure you don't paint the material though, you want sound to be absorbed and paint can reduce absorption rates.

It is easy to become focused on the video quality or what your shot looks like when creating multimedia, making it easy to overlook sound quality. It may be hard to believe but a general audience is more prone to sit through lower quality video as long as the sound is clean and clear while most people will not watch a production with poor audio quality, no matter how great the image looks. It is difficult to stay engaged and concentrate on the material if you are struggling to hear or make out the words. A good rule of thumb is to choose your filming location based on how the area sounds; you can always clean up the background and make the shot interesting after you've found the location.

CAMERA CONNECTED TO SWITCHER WITH A TALLY LIGHT

03

In The Holler studio we use very high quality production cameras equipped with tally lights. A tally light is connected to a production switcher and it changes color to indicate when a camera is about to go live, or is already being broadcast out of the studio. We practice daily, so we've become use to the tally light, but it can also be very distracting. Often, if conducting an interview with someone new to video production, we will turn the tally light off to ease some of the tension: people tend to be more relaxed if they are not actively thinking about the cameras pointed at them.

As with sound, there are a few key elements to consider when setting up your camera. No matter the quality or how much the camera costs, pay attention to lighting. All cameras love light and the more you can provide chances are your image will look cleaner and have less noise and grain in the image. If you don't have access to lighting kits you can use windows with blinds to control the amount of light coming through or lamps and lighting already in the room. Take your camera off the tripod and move around to multiple locations, checking the natural light in each location to find the best possible scenario. If conducting an interview or shooting news footage, make sure the eyes of the people on camera are well lit and easy to see; this inherently makes them seem more believable and trustworthy to an audience.



Video production is hard enough, don't try to create work without help! This is an often overlooked tip, but having someone who can help adjust the camera, set up a microphone, drop an extension cord or power strip, or just someone to bounce ideas off of is invaluable when creating multimedia projects. If you want to be successful in media, you have to learn to share your vision and to allow others help you realize it.



Building a Gameboy

Use code to create something you can hold

When The Holler first began, programming and creating interesting products using code was on the short list of skills we hoped to encourage. Fast forward and the Appalachian Renaissance Initiative (ARI) and the Appalachian Technology Institute (ATI) have created an opportunity for high school students to learn programming as part of their daily class schedule. The Eastern Kentucky region has evolved from a select handful of courses being offered to hundreds of students actively learning Javascript, Python, and the Web design languages HTML and CSS.

Learning a programming language is like learning French, Spanish, or German. It is just written and not spoken. One of the first frustrations you see in a new programming student is the time it can take to really master or understand the new language, but you wouldn't expect to be fluent in Spanish one or two months into the learning process so you should not expect to be fluent in Javascript at first either. Once you do start to master the language, or are able to edit and write some original code, you can often be left with one glaring thought: what do I do with this now?



The Holler has started a new program, live streamed on Twitch.tv, to address this issue in a proactive and interesting way. Coinciding with the global Hour of Code Week by Code.org, and using tutorials and components from electronics company Adafruit, The Holler spent the week building a custom yellow Gameboy called the PiGrrl. The PiGrrl gets its name from the \$20 Raspberry Pi microcomputer that handles the processing of classic Nintendo, Super Nintendo, and Gameboy games. The project was not easy. It took the normal Holler media crew completely out of their comfort zones as they soldered wires onto makeshift circuit boards and followed wiring schematics to make sure the micro USB port could both power the PiGrrl and charge the internal Lithium Ion battery simultaneously.

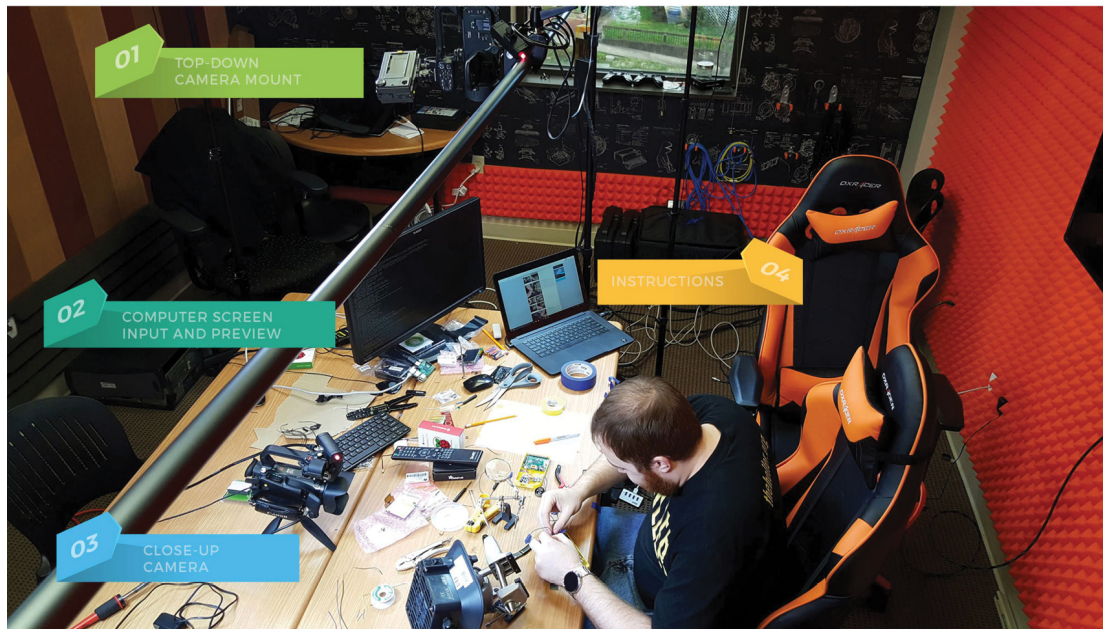
Beyond the skills needed to engineer the case, 3-D printed from Adafruit templates in The Holler studio, we also needed to program the Raspberry Pi to run the Linux-based game emulator system and to load the ROMS (game files) onto the operating system. If you have never used a Raspberry Pi, it is important to point out it does not come equipped with a preinstalled operating system. You must format and install a port of Linux onto a micro-SD card and boot the system using terminal commands. Transferring ROMS through the network and adjusting some Python code to accommodate for the extra two buttons we decided to include on the gameboy was an interesting coding challenge as well.

Operating out of our comfort zone, we also thought it was important to live stream this process on Twitch rather than creating a polished YouTube video of the production. We wanted students from the region participating in Hour of Code Week to be able to ask questions as we worked and to see the problem-solving methods we employed when we ran into issues or challenges, which we often did.



Second graders from Mrs. Hyden's class tune in from Johnson County, Ky.

It is important to monitor both successes and failures when learning to work within programming and engineering, and the Twitch platform allowed us to connect with students in a very organic and natural way. We are looking forward to creating more projects with The Holler community and creating connections between the theoretical world of learning code and the tactile and tangible products that can be made after picking up a new language.



Building the Twitch Stream

Where do we put the cameras?

01

TOP-DOWN CAMERA MOUNT

When planning our shoot we wanted to be absolutely certain the audience could focus on the fine details and close up work required to complete the Gameboy build. To make it feel like the audience was in the studio with us, we incorporated a top-down camera to replicate the first-person perspective of actually working on this project. Top-down camera work has become popular in YouTube unboxing and build videos. Twitch users also utilize top-down cameras to bring people into the action of a creative project. Our top-down rig consists of a backdrop holder (two light stands with a cross bar) and a camera clamp. You can also create a simple top-down shot using a basic USB web camera. If you attempt a top-down shot be sure to secure your camera in case something in the rig fails. The last thing you need is a broken camera. Take your time, make sure everything is supported, and work on your shot.

02

COMPUTER SCREEN INPUT AND PREVIEW

Computer screen or program inputs are typically essential for a successful Twitch stream, but this was one of the rare cases where it wasn't actually necessary. We included the Raspberry Pi screen to make sure users experiencing the Pi for the first time would be familiar with how the boot screen looks and the basic command line interface we would need to program the controls and transfer the classic ROMs over our network. While we only used this screen for a short time, it still added an interesting texture and feature to our stream.

03

CLOSE-UP CAMERA

This camera is the primary focus for our viewers. Much of the Gameboy build included soldering wires, using heat-shrink plastic, and generally making a mess of things. The close-up camera allows viewers to get right in on the action and view what's happening as if they were actually sitting at the table.

In this case, the close-up camera can be slightly difficult to pull off. We had to continually adjust the shot to make sure the action was always in frame. To do this we used a tabletop mini tripod that we could easily maneuver and adjust. If we use a standard tripod for this we would have had to get up and move around the table every few minutes to adjust the shot. If you don't have access or budget to buy a small tabletop tripod you can always use a standard tripod and assign someone to be on camera duty, ready to adjust at a moment's notice.

Another potential problem is the proximity between the camera and the subject. Have you ever tried to get a close-up and no matter what you do the camera just won't focus? If this is the case, your camera is too close to what you're trying to film. Every camera lens has a minimal distance it must be away from a subject before it can get proper focus. Take some time and practice with your gear so you get used to the range you have to work with.

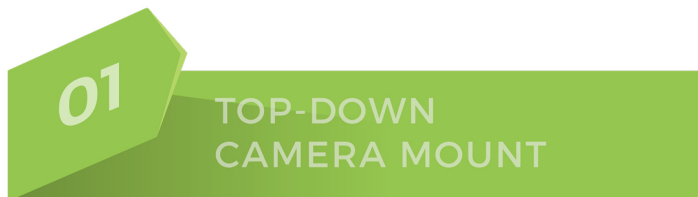


Our Raspberry Pi Gameboy build came from a company called Adafruit. They have a great education section on their site and we wanted viewers to see the instructions we were working from as we progressed through the build.



How Did it Come Together?

The final Twitch stream design



The top-down camera was great for showing the wide range of tools we used in the build as well as notes and schematics we drew in the process. Depending on where the action was, we had the ability to swap the top-down and close-up cameras so the audience could focus in on the most important elements as we moved through the build. Having two camera angles definitely made things more interesting and gave the audience a better feeling for what it would be like to work in the studio.

02 COMPUTER SCREEN INPUT AND PREVIEW

The Raspberry Pi screen was full of command line Linux commands that may not be familiar to the average viewer. We decided to leave this screen up through the entire process in case any viewers had specific questions about the interface or process for working with the Raspberry Pi.

03 CLOSE-UP CAMERA

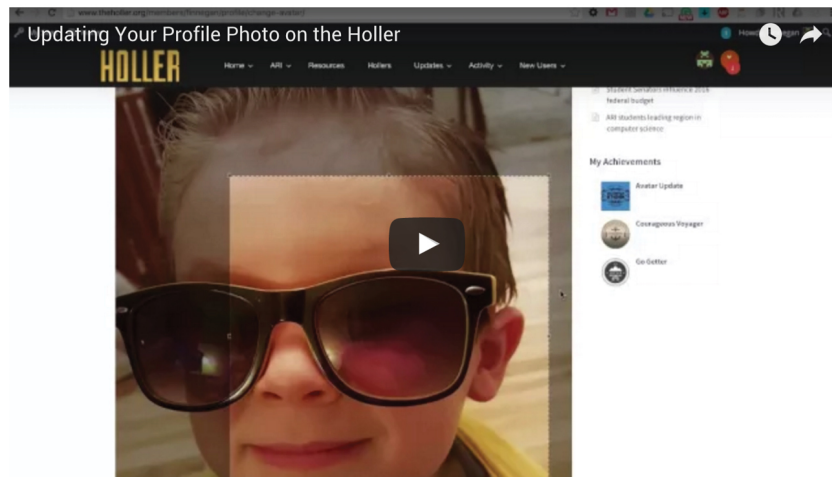
This close-up camera shot perfectly illustrates the content we were trying to focus on. In addition to being informative, the angle is visually interesting to audience members who are not familiar with this kind of work and to those who have been soldering or working with electronics for years. A well-placed camera angle is valuable for any production you may work on.

INSTRUCTIONS 04

We thought it was important for viewers to know we were following along with a predetermined path. If they new detailed instructions existed they would be less intimidated to try projects like this on their own. Twitch also incorporates a chat module for viewers and broadcasters to discuss what's happening. By including the instructions, viewers could offer more informed questions or opinions based on the steps required to build the Gameboy or specific actions we were attempting in the process.

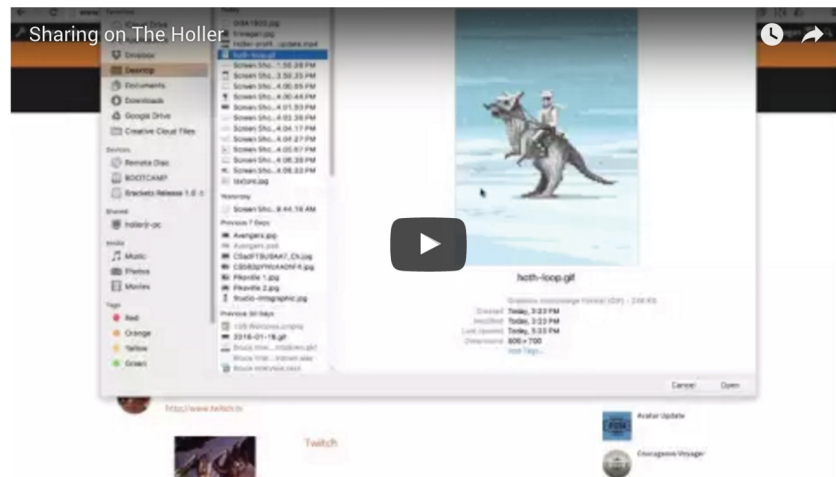
Updating Your Profile Photo

Holler tutorial video



The Holler Activity Stream

Holler tutorial video



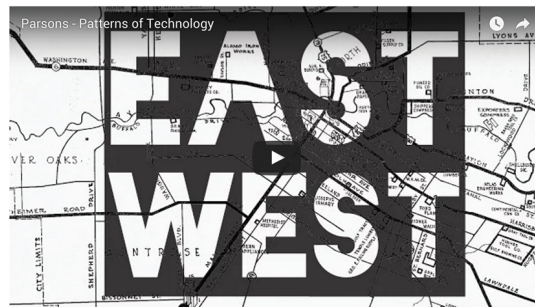


WHAT HATH GOD WROUGHT?

The Telegraph to Twitter

Patterns of technology

It is hard to imagine today's society waiting on a message. In fact, much of our current way of life has been built on the fact that we no longer have to wait on messages to come through or for information to travel great distances; just hit send and it will be almost instantaneous. One of the most interesting things about today's connected culture is the simplicity from which it derives, the mindset, not the technology. The general population probably does not give it much thought, but in May of 1844 the general consensus was that God is bringing a new way of communicating to the world, starting with Washington, D.C., and Baltimore. This new technology would be so powerful its basic structure would still be the messaging standard more than 150 years later.



Patterns of Technology video lecture

It all began with one message: “What hath god wrought?” sent by Samuel Morse between Washington, D.C., and Baltimore, the message was transmitted through a telegraphic wire and the content was a message all in itself. The meaning, translated to a modern context, relays how vast and instant the telegraph was going to change the world, and essentially, a change that large could only be facilitated by God. If the fastest way to send a message, from the time of Alexander the Great to Benjamin Franklin, was via horseback, the instant service of the telegraph had to be a difficult concept to wrap one’s mind around (Howe, 2007).

One of the most interesting aspects of the rise of the telegraph in modern communication is the direct parallels to the Internet boom and the messaging applications and tools that have been created as part of that process and how closely it resembles the rise, development, and use of the telegraph.

While Samuel Morse is the well-known inventor of the telegraph and the Morse code messaging service that made the quick transmission of information possible, he was not the only inventor working on this technology; In fact, he was not an inventor at all. Morse was a trained painter, working through many contracts and agreements with the United States government to paint portraits and political scenes for the nation’s capitol. The general story is that while Morse was in Washington working on a commission, his wife became ill and by the time the information arrived from New York City, and he rushed home, she had already passed away (Alter, 2003). Driven by the thought how to receive messages more quickly, Morse began working on the technology to make this happen. While this story is mostly regarded as true, Morse was not the only person working on telegraph technology, and not even the first to have tested and proved its worth. Morse’s ability and familiarity with government commissions and contracts gave him a leg up and name recognition as he propositioned the federal government to fund his telegraph system between Baltimore and Washington D.C. (Marcus & Sollors, 2009).

The next pieces of the story are very similar to patterns in technology that would follow with the Internet and tech entrepreneur Steve Jobs of Apple. Jobs did not invent the cell phone, but his publication of the iPhone and of Apple Computers pushed him to the forefront of the industry and made him the household name of that particular technology (Isaacson, 2011). The same recognition happened with Morse, especially because of the branding of Morse code. Just as Jobs did not invent the phone, Morse did not really invent the telegraph. He was, however, able to see the patterns being developed by other smaller technologies and was the first to figure out how to combine and market their abilities in order to create a successful larger product. Much like the Internet was created from government funding and research at academic institutions in the United States, the government funding for Morse’s work fueled the telegraph’s existence, with the private sector immediately seeing the benefits and profitability, paving the way for the corporate takeover and future development of the technology.

One of the first pivotal moments for the telegraph came at the Democratic National Convention in 1846. Partially because of the excitement from the new technology, and partially from the speed in which it enabled people to act, James K. Polk used the telegraph to send a message to New York Governor Silas Wright, asking him to join the ticket as vice president. Wright responded with a “no thank you” and Polk went on to win the presidency anyway (Howe, 2007). This story is interesting for many reasons,

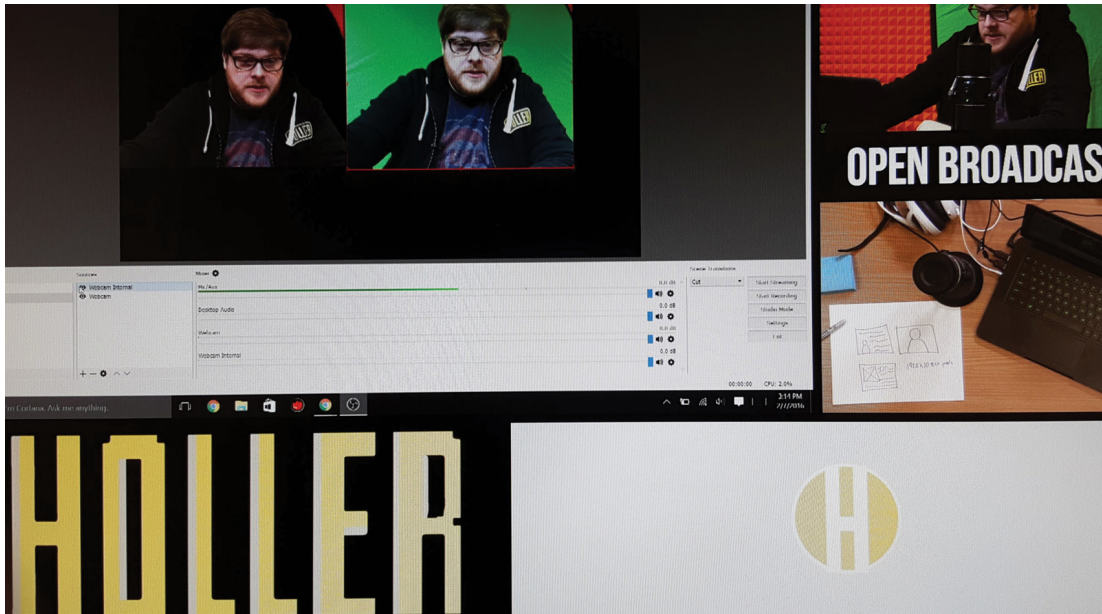
but most importantly because of its similarity to the current messaging service, Twitter. Twitter was developed as an extension of the SMS text message, which is many ways was derived from the model set by the telegraph. The greatest difference between the two technologies is one being point-to-point communication and the new technologies using that same structure to deliver content point-to-mass. Mitt Romney invited his presidential running mate to join the ticket in 2012 via Twitter, and although it was an obvious political media opportunity, it is almost impossible to imagine the reaction the media would have had if Paul Ryan had said no in such a public way (Adams, 2012).

One of the most interesting parallels to the telegraph and modern technology, especially the character-limited Twitter message, is the best selling book *The Anglo-American Telegraphic Code to Cheapen Telegraphy and to Furnish a Complete Cypher* (Tabler, 2014). Many modern day luddites and technophobes like to dismiss digital chatter and messaging because of phrases like BRB, LOL, and OMG, but this type of low-character count messaging comes from necessity and ease of use; it is also a practice that started in the 1800s to keep the cost of telegraphs to a minimum, since users were charged via word count.

The main lesson learned from the telegraph, and technology in general, is its development is cyclical and typically driven by human needs, in this case the need for more efficient long-distance communication (Leonhardt, 2010). The same philosophy used in the 1800s to create the telegraph was used in the 2000s to create Twitter. Understanding these patterns is essential to navigating the technology wave to come, and more importantly, to allow everyday consumers and users to be active developers in that new technology.

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All for Free?

Attempting student news with Open Broadcaster

Can free software really take the place of a polished and expensive professional solution? With video production switchers and accompanying software costing anywhere from \$3,000 to \$6,000, it is definitely worth finding out.

The free Open Broadcaster software is a favorite with Twitch.tv streamers. In the video, we test its usefulness for student news and video production.



Creating student news templates in Open Broadcaster



Pulling the Thread

Attempting innovation in education

Introduction

Finding consensus of what it means to be innovative in the classroom, or education in general, could prove to be difficult, if not impossible. It is easy to get caught up in equipment like iPads and new computers but most teachers would probably agree that the presence of the new materials do not guarantee innovation or improve the learning potential of the students who use them. True innovation, in education or otherwise, involves trying new things, going out on a limb, and being prepared to learn from failures or missteps. For the purposes of this exercise, we are going to throw out the term innovation and simply refer to its premise as “trying out an idea.”

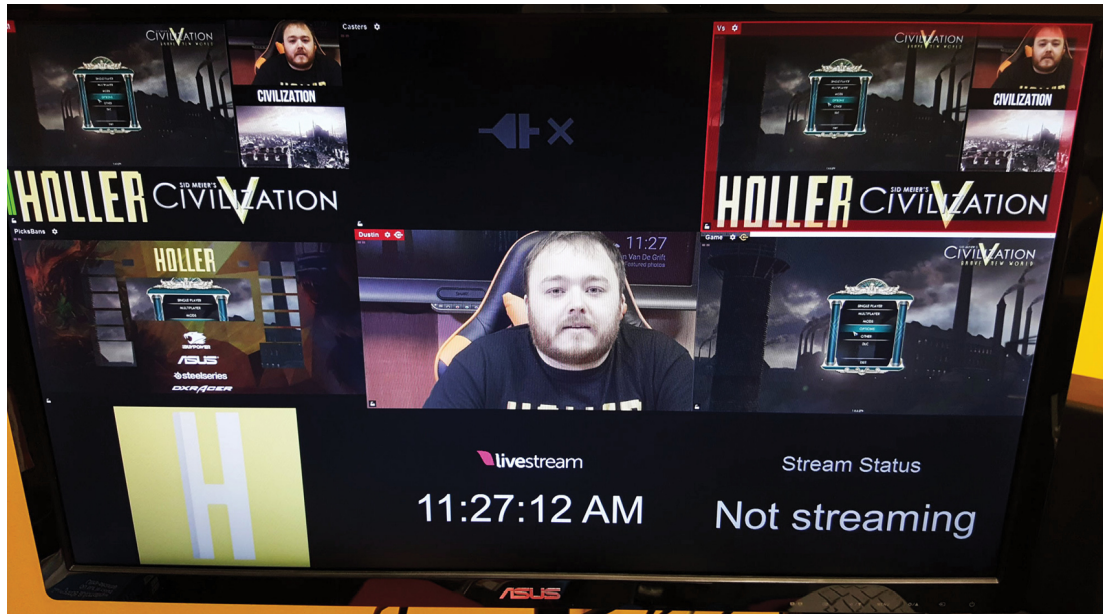
The Idea

Sid Meier’s Civilization V (Civ) is a turn-based strategy game that has been around for more than two decades. The game has grown into a gaming cultural icon with the fifth edition having launched in 2010 and still being played hours on end by players around the world. In the game, you choose from different civilizations throughout world history and you compete against others, the game’s artificial intelligence (AI) or other human players, in an attempt to gain victory from a cultural, scientific, or military dominance of the other participants.

Civ is a very intricate game and it takes quite a bit of concentration to be successful and to learn the gameplay process. Each civilization has its own personalities, strengths, and weaknesses. Atilla the Hun and Genghis Khan benefit from a strong army in the early game and can quickly spread across the map. Choosing Korea will help you in achieving a science victory, but only if you can successfully navigate the process of surviving and flourishing until you complete the Apollo program and launch a space shuttle into orbit. How the AI handles playing as Ghandi is a running joke in the Civ community; if you attack him be prepared to defend yourself.

There are so many potential threads that can be pulled from this game for use in a classroom setting and the articles that follow this page will attempt to demonstrate a few of those. We are going to start with a breakdown of the intricacies and play style of the game. We will then talk to a psychology professor who will expand on the historical and cultural details of four civilizations you can use within the game. We will also explore the math and programming side of how the game functions and what exactly is happening as you click around the map. We are going to try out an idea. Can we use Sid Meier's Civilization V in a classroom and education setting beyond just playing the game? The end goal of these next few articles is not to offer completed lesson plans or classroom activities, but rather to introduce a new tool (Civ) and attempt to pull out the threads engaging educational exercises. The hope is that readers will take these steps, or concepts, and apply to other digital tools or strategies they may have at hand. Who knows, maybe they will also play a little Civ.

**For those interested in playing or using Civ in their classroom, it is unfortunately not a free program. Since it has been out since 2010 you can buy a copy for less than \$8 on the video game platform STEAM. One license will allow you to install the game on an Apple or Windows computer and the turn-based functionality of the game will allow for multiple players to play from one machine or installation.*

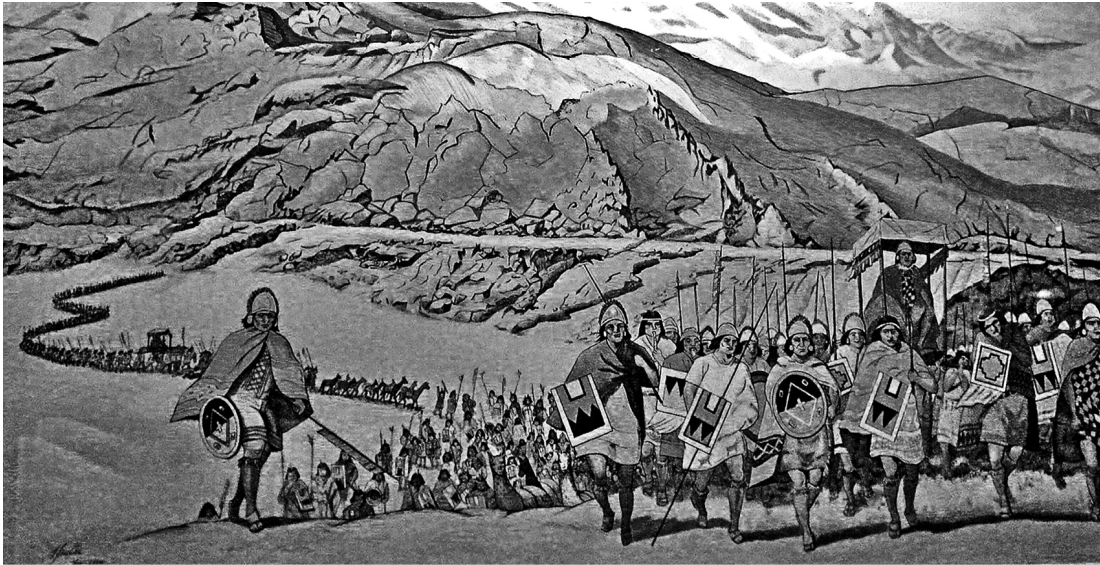


Thread: Playing Civ

with Esports coach Eric VanHoose

Eric VanHoose is the Esports head coach at the University of Pikeville (UPIKE) and a lifelong gamer. Coach VanHoose works with college students in UPIKE's scholarship supported League of Legends team and helps the players translate their video game skills to the college classroom as they pursue their degree. As you will learn in the video, he has spent more than 600 hours perfecting the art of playing Sid Meier's Civilization V. In this video, Coach VanHoose will break down the basics of the game and demonstrate key concepts to playing successful and engaging campaigns.





Thread: History and Culture

With Dr. John Howie

The easiest thread to pull with Civ is further exploration into the culture and history of the many civilizations within the game. In some ways this thread is the easiest to look over, or bypass altogether, because it is the most straightforward exploration of ideas within the game ... but that would be a mistake. Easy does not mean simple and as we explored the game with University of Pikeville psychology professor Dr. John Howie we learned just how complex the easy path could become.

Dr. Howie was not familiar with the game so we began by showing him the basics and introducing a basic premise or theme for our discussion. We were working to recreate the Spanish arrival to South America and the impact of the Inca, Mayan, and Aztec cultures as a result of Spain's arrival. This just happened to be a specialty of Dr. Howie's and he was more than excited to take us through the history and culture of the period.

Bringing in a specialist to discuss the intricacies of what actually happened in the historical context could translate to any number of classroom activities. The layers and experiences you can add to a student's learning by involving a new perspective or voice

can help take this simple first thread and turn it on its head.

The most interesting discovery came from how Dr. Howie would phrase or describe what would need to happen in order to win the game as one of the South American cultures. It would be easy to assume someone would need to know more specific details of a game and how to play it before they could accurately predict outcomes within the game, but Dr. Howie relied on facts, his experiences, and the cultural and historical perspectives of those respective civilizations: the game does that as well, so it actually makes sense.



$$p' = p_b(k)(1 + p_m n) = p + p_m p_b(k)$$

$$c' = (n + 1)c_t + c_c = c + c_t$$

Then calculate t' and check when it gets smaller than t (this would signify an increased policy speed)

$$t' = p' / c' = \frac{1 + p_m n}{c_t n + c_t + c_c} < \frac{1 + p_m n - p_m}{c_t n + c_c}$$

$$(1 + p_m n)(c_t n + c_c) < (1 + p_m n)(c_t n + c_c) + (1 + p_m n)c_t - p_m(c_t n + c_t + c_c)$$

$$p_m c_t n + p_m c_t + p_m c_c < c_t + p_m n c_t$$

$$p_m(c_t + c_c) < c_t$$

$$r_c = \frac{c_c}{c_t} < \frac{1}{p_m} - 1 = \frac{1 - p_m}{p_m}$$

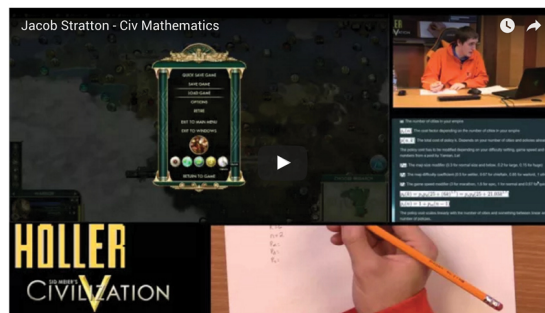
For standard-sized maps, $p_m = 3/10$ so

$$r_c < \frac{7}{3} = 2.\bar{3}$$

Thread: Math and Programming

with Jacob Stratton

Jacob Stratton, the Chief Mathematician at The Holler, is the coordinator of new media at the University of Pikeville (UPIKE) and refers to himself as a computer scientist. Stratton graduated from UPIKE with a double major in mathematics and computer science. He is the type of person who finds math fun and was very excited at the challenge of finding math and programming examples within the Civ game to pull out as an example.





Fireshare Podcast

An interview with Willa Johnson and Tanya Turner



Q: Why create a podcast to tell your story? How familiar are your interviewee's with the form?

There's a rapidly growing audience for podcast news and entertainment. This medium allows listeners to multi-task and tune in at times most convenient for them. Working with and learning from educators daily, podcasts seemed like one of the most accessible platforms to value their time and energy when not teaching. After putting in a full day of classroom instruction, teachers rarely have time to watch video documentaries about best classroom practices and cutting edge learning innovations. Like all of us, teachers want to go home and be present with their families. Podcast provides a much more flexible form of communication, accessible with smartphones during commutes, planning periods, or even while they're brushing their teeth in the morning. This all makes podcast so appealing for these critical stories.

Willa: I listen to podcasts almost daily. As a digital storyteller I enjoy all mediums, but this is a way that I learn or hear a new story as I'm doing something else. I often listen to a podcast when I'm driving or when I'm cooking dinner. It provides this vehicle for storytellers that other forms of media don't, and that it is mobile and fluid. As a listener, I don't have to stop what I'm doing to observe, I instead get to use my time doing daily task and learn something new at the same time.

Tanya: I'm fairly new to podcasts myself. When Willa and I first started working together at KVEC she introduced me to education podcasts that helped us better understand the ways educational innovation is discussed and presented nationally. We found that rural educators were very rarely spotlighted in stories of educational excellence. That was a pretty disappointing gap to find. We are constantly inspired but the innovative leaders and learners engaged in the ARI and believe there is certainly a national audience of rural communities who need these stories.

Many of our interviewees are very familiar with podcasts, and some are new fans! Some of that variation boils down to a generational divide. Our hope is to bridge that gap and attract not only new listeners who already enjoy podcast, but also attract new people who have never listened to podcasts before. We're especially excited to connect with not only listeners here in Central Appalachia, but rural communities all over, looking to classrooms, young learners, and technology solutions for lessons and inspiration.

Q: What are the challenges? Is it harder on the tech side or engaging with people through audio?

Willa: This is my first dive into editing all audio, my background is mainly video, so yes. I have to rely solely on what my interviewees are telling us to tell the story. I can't cut to a shot of something to really make a point, the words they are saying have to make the point on their own. I have learned to be really thoughtful about narrating and how to connect dots that might not happen naturally in an interview, but it's still a little more restricting to me to not revert back to visuals.

One of our biggest challenges is narrowing down our stories. There's so much incredible work happening in and around K-12 classrooms in east Kentucky. Collaboration makes a lot more people active participants in each story, so finding the time to

capture, script, and edit all of that can feel overwhelming at times.

Tanya: Interviewing people about the beautiful work they're involved with has been really wonderful. But I'm still figuring out how to make people the most comfortable talking about themselves and leading the conversation in the right direction. There has certainly been a technology learning curve, but The Holler is the most fun space to explore and try new things. The studio also goes a long way in making people feel encouraged enough to share their creativity and successes and challenges. The editing and production part can be overwhelming and frustrating at times, but getting a cut you're really happy with, your interviewees are happy with, and listeners find valuable feels really good. I'm learning a ton in the process.

Q: How do you think the show will progress? What are you looking forward to?

We hope the show will grow to be more organic as time goes on. Right now it doesn't have a lot of ambient sounds because we have been working diligently to capture good quality interviews and to really find our pace for editing the interviews and narration. Now that we have a better sense for the basic structure of how we will tell these stories, we want to be a little more experimental and allow more space for audio from the actual work happening in the classrooms.

We are also working to have students and teachers become FIREshare Fellows. We want them capturing audio that we might not be able to get ourselves. We're really excited to see more people not only telling their story but also learning how to capture it as well.

Q: How do you gain a new audience as you start a podcast? That seems like a difficult process.

In the beginning we tapped into our audience that exists with KVEC and The Holler. Our family and friends obviously showed a lot of love and support for a new project. We also created social media accounts on sites like Facebook and released it there. It was well received in that circle, but the challenge now is to push it further. The entire purpose around this podcast is to be a resource for educators and learners in any rural community to tap into and find inspiration or ideas for their own classrooms, neighborhoods, and towns. We haven't yet figured out exactly how we will build this audience, but one hope is to collaborate with post-secondary education programs. The need for rural stories of educational excellence is certainly apparent in the national education conversation. Anyone reading this should definitely subscribe to The Holler's podcast channel, listen, and share! You can also get up with us directly at FIREshare@theholler.org.

VITA

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EDUCATION

May, 2005	Bachelor of Art Morehead State University Morehead, Kentucky
June, 2008	Master of Fine Arts Ohio University Athens, Ohio
May, 2016	Doctor of Education Morehead State University Morehead, Kentucky

PROFESSIONAL EXPERIENCES

June, 2008 - August, 2010	Filmmaker and Educator The Appalshop Whitesburg, Kentucky
June, 2009 - August, 2010	Adjunct Professor Southeast Community and Technical College Whitesburg, Kentucky
August, 2010 - Present	Director of New Media and Instructional Design University of Pikeville Pikeville, Kentucky
August, 2011 - May, 2014	Program Founder and Assistant Professor of Film and Media Arts University of Pikeville Pikeville, Kentucky
July, 2014 - Present	Founder The Holler Pikeville, Kentucky

HONORS

- 2009 Creative Voices: The Asia Society
Indonesian Cultural Exchange
Yogyakarta, Indonesia
- 2010 Museum of Modern Art (MOMA)
Documentary Fortnight Presentation with the Appalshop
New York, New York
- Philips Exeter Academy
Visiting filmmaker and keynote speaker for entire
student body
Exeter, New Hampshire
- 2011 Case Kentucky
Presenter on University Marketing and Branding
Lexington, Kentucky
- 2013 Appalachian Studies Association
Youth Media in Central Appalachia
Boone, North Carolina
- 2014 Association for Educational Communications and Technology
Roundtable discussion about theHoller.org
Jacksonville, Florida
- The Holler / Kentucky Valley Educational Cooperative
Team member for \$30 million federal grant
Hazard, Kentucky
- 2015 UPIKE Esports
Founded collegiate esports scholarship program featured in
over 300 publications around the world
Pikeville, Kentucky
- Rural Education Consultation with Google Apps
Google
Mountain View, California

Rural Education Consultation with Apple Computers
Apple Computers
Cupertino, California

Rural Education Consultation with Code High School
San Francisco, California

Rural Education Consultation with GSVlabs Incubator
Redwood City, California

Digital Technology in Higher Education Conference
Apple Computers
Cupertino, California

Association for Educational Communications and Technology
Roundtable discussion about *Head of the Holler*
Indianapolis, Indiana